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TRANSLATIONS ON ENVIRONMENTAL QUALITY

No. 177

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DANGERS OF INCREASE OF CARBON DIOXIDE IN AIR FEARED

West Berlin DER TAGESSPIEGEL in German 8 Jul 78 p 11

[Article by Marion Kern: Carbon Dioxide: Climatic Danger]

[Text] "That makes me tremendously uneasy--I would like to pass along this uneasiness to the government!" This statement by Professor of Climatology at the University of Muenster Wilfried Bach relates to the influences of man on the climate and is supported by many of his colleagues--as was shortly demonstrated at an international convention on this subject in the Federal Environmental Agency. In the next 50 years--according to the result of the convention (which is reported briefly here)--the average temperature of the earth's atmosphere will undergo an increase greater than anything experienced in the last 2,000 years: By the year 2000 the scientists expect a global temperature increase of "only" 1 degree centigrade, but this "minor" global heating can have catastrophic regional consequences which will become more intense if an increase by 2 to 4 degrees centigrade is attained by the year 2050.

"Greenhouse Effect" Due to Gases

Man sits on the "defendant's bench" of the climatologists: Climatic change will be primarily a consequence of his activities which permit "greenhouse" gases to get into the earth's atmosphere. Such gases are primarily carbon dioxide, but also chloro-hydrocarbons and nitrogen oxides as well as aerosols (very fine suspended particles). The carbon dioxide (compound of carbon and oxygen) resulting from the combustion of fossil fuels like coal and petroleum does permit short-wave solar radiation to pass freely to the earth, but it absorbs the infrared radiation coming from the earth's surface--just like the other "greenhouse gases." Heating of the lower air layers--the so-called greenhouse effect--is the result.

With the rapid, world-wide increase in energy consumption, the carbon dioxide content of the atmosphere has increased to 330 ppm at present--that means that for 1 million parts of air, there are 330 parts of

carbon dioxide. If we assume an annual increase in the consumption of fossil fuels by 4 percent, then as Professor Kellog of the World Meteorological Organization (WMO) in Geneva explained, in less than 35 years a value of 400 ppm carbon dioxide in the atmosphere will be reached. This would correspond to a global increase in surface temperature of 1 degree centigrade.

Effects Not Yet Measurable

Previous results from three WMO monitoring stations prove that the carbon dioxide content of the air is increasing: Similar values were obtained in North Alaska, at the South Pole and on a 3,200-meter high mountain top in Hawaii. Professor Flohn (Meteorological Institute of the University of Bonn) believes that this shows that carbon dioxide is distributed very rapidly throughout the atmosphere. However, climatic changes due to the carbon dioxide and--even though to a lesser extent--the other greenhouses gases, are not yet measurable. We quote Professor Bach on this subject: "At the moment we cannot demonstrate the human influence on climate since it is still drowned by the noise of natural climatic fluctuations. But by the year 2000 we will be able to detect this influence. Of course, by then it is rather late since it will take a long time to introduce countermeasures." Professor Kellog emphasized that even for a rapid reduction in the consumption of fossil fuels, some heating would be unavoidable since the decomposition period of carbon dioxide is 1,000 to 1,500 years.

Counter to the fears of climatic researchers it is often objected that they are working with models which leave out many components. For instance, very little is yet known about the absorption of carbon dioxide by the oceans. But one can surely conclude, as Dr Hampicke of the Environmental Working Group of the University of Essen explained, that the oceans "swallow" more than 40 percent of the carbon dioxide from fossil fuels. In addition, coal, petroleum and natural gas are not the only sources of carbon dioxide. Another important factor in the atmospheric increase in carbon dioxide is the reduction in the earth's vegetation cover. We refer here to the particular trend for "clear cutting" of vegetation in the tropics, thus making such areas unavailable for carbon dioxide consumption.

The Search for Acceptable Magnitude

Scientists do not agree on an "acceptable magnitude" for global heating. Professor Flohn: "Even if an increase by 1 degree were acceptable, then the carbon dioxide content of the atmosphere would have to be limited to 440 ppm. It is probably impossible to keep from exceed this value, particularly because of the increasing energy needs of developing countries."

For an increase of two degrees centigrade, climatologists postulate grave regional consequences, particularly for water supply. Among other affected areas would be the granary of the United States, the grain belts of Indiana, Illinois and Ohio. The ideal growth temperatures would shift northward where soils are not suitable for grain, as Professor Bach emphasized.

However, Professor Flohn believes that Central Europe will be little affected by climatic changes in the next 40 to 50 years. "But what we fear the most is that by the year 2050 we may have a climatic state which has not existed for more than a million years." Scientists have only a very vague concept of this state as it existed before the last ice age. However, a reduction of Arctic drift ice, semiarid conditions in Central Europe, a shift of subtropical dry zones to the boundaries of Central Europe and the possibility of regular summer droughts is supposed.

These suppositions must however, be supported by an intensive interdisciplinary research--as stressed by a number of convention participants. One contribution to this will be provided by the European Society with an already-conceived five-year research project. And at the World Climate Conference of the United Nations in the spring of next year to which the results of the Berlin Conference will be presented, additional activities and potential countermeasures will be discussed.

Expanding the "Energy Mix"

At the Berlin conference, pleas were made primarily for an expansion of the "energy mix" and for the most rational use of energy. Professor Bach: "Our energy policy is running on two tracks only with the emphasis on coal and nuclear energy. I consider this two-tracked approach to be extraordinarily dangerous. We need more options." One thinks primarily of the intensified utilization of solar energy when discussing increasing the "energy mix"; Dr Wege of the German Weather Service has also pleaded for this. Professor Marchetti of the International Institute for applied Systems Analysis at Laxenburg (Austria) presented an "original" suggestion: According to him, carbon dioxide should be removed together with other harmful gases from power plant exhaust and fed to the ocean at great depths.

The scientists do not expect a solution--as Dr Wege stressed--"certainly not in the next 20 to 50 years" because only joint international efforts could provide this solution. But, as Professor Bach said, "we cannot give up in advance."

9280
CSO: 5000

EFFORTS TO INCREASE ENVIRONMENTAL AWARENESS REPORTED

Jakarta KOMPAS in Indonesian 14 Apr 78 p 2

[Text] Head of the Hydrochemical Section of the Directorate of Water Research (DPMA), engineer Badruddin Machbub, declared that in Indonesia there are only a few industries which have the facilities to process waste water to prevent environmental pollution.

The ITB [Bandung Institute of Technology] graduate, who had obtained additional training in Holland on water treatment, disclosed the above data when questioned by an "Antara" reporter about the pollution of water by industrial waste water.

Hundreds of other industries in our country pay little attention to the problem of pollution; there are even some which entirely lack waste water processing facilities, he said. He added that the lack of interest in waste water processing facilities is perhaps caused either by the lack of awareness or funds.

He said the cost to process waste water in the overall prevention of water pollution is not more than 3 percent of the product's selling price. But a factor that is even more decisive than cost is the factor of environmental awareness.

Badruddin Machbub praised the efforts taken by experts in various universities who have conducted seminars to discuss the damaging effects of pollution. Also, governmental research institutions have held seminars to discuss the criteria or requirements for the quality of waste water.

Engineer Badruddin Machbub further said, that the Directorate General of Textile Industries has been taking measures to combat the problem of waste water pollution. Among other things, it gave talks on pollution to the textile industry between 1975 and 1977.

In addition to these talks, the Directorate General of Textile Industries is cooperating with the Directorate of Water Research of the Directorate General of Irrigation, Department of Public Works, in conducting research on economical methods of processing industrial waste water that are appropriate for conditions in Indonesia.

Badruddin Machbub feels that the activities being carried out by the Directorate General of Textile Industries should be emulated by and applied in other industrial sectors. Talks, symposiums and research on pollution are important factors in increasing our environmental awareness, and in supporting the effort to curb water pollution in particular.

9203
CSO: 5000

SABAH READYING BILL ON ENVIRONMENTAL CONTROLS

Kuala Lumpur NEW STRAITS TIMES in English 3 Jun 78 p 6

[Text]

SABAH is drafting legislation that will give the State Government a virtual veto power over projects that will seriously damage the environment.

The Bill, likely to become law before the end of the year, will require developers to submit to a special government committee statements assessing the impact their projects will have on the environment and the proposed preventive measures.

If the committee finds the measures inadequate, the developer concerned will be "advised" not to go ahead with the project.

KOTA KINABALU: Friday

Any developer who refuses the advice and subsequently causes pollution or damage to the environment will face a number of penalties.

Major impact

State Minister of Manpower and Environmental Development Datuk Yap Pak Leong said the legislation would create a Department of Environment as the enforcement agency.

He said the State Environmental Co-ordinating Committee was now studying the first draft of Bill because it would have a major impact on many areas of State Government activities.

Amendments were likely to be made to several existing laws such as the Town and Country Planning Ordinance.

Talks were also being held with the Federal Department of Environment in the Ministry of Science, Technology and Environment, which was believed to be considering a similar requirement under the Environmental Quality Act.

Datuk Yap assured developers and industrialists that the economic questions would be taken into account when enforcing the proposed legislation.

He said the management of the environment was both a scientific and economic exercise and the State Government realised that a price must be paid for industries.

Pollution was bound to occur as Sabah's agricultural and industrial development accelerated, he said.

Planning

"But what we are attempting to do is to incorporate the element of environmental planning into economic planning.

"After all, the end result of any development must be a healthier and cleaner environment for the people to live in," Datuk Yap said.

He believed the proposed legislation would benefit developers in the long-run by saving them the costs of rehabilitating the damaged environment or compensation to people affected by industrial pollution.

Datuk Yap said his Ministry had begun recruiting skilled staff for the Department of Environment.

If necessary, foreign experts would be employed in the initial stage to ensure effective enforcement. — Bernama.

CSO: 5000

COMPLAINTS AGAINST POLLUTION REACH PEKING ENVIRONMENTAL PROTECTION OFFICE

Hong Kong TA KUNG PAO in Chinese 16 Apr 78 p 3

/Article by TA KUNG PAO reporter Hsu Yao-chung /1776 5069 0022/: "Exhaust Smoke Makes People Dizzy, Polluted Water Harms Crops; Industrial Pollution and Noise Endangers Human Life; Peking Citizens Write Demanding Action; In First Quarter Only Five Complaints Corrected, Really Too Slow, Should Be Dealt With As Quickly As Possible"/

/Text/ A reporter from this paper, Hsu Yao-chung reports: Recently, reporters went to the Environmental Protection Office in Peking for an interview and saw there a large number of letters received from the people. The writers of these letters had in their own persons concrete proof of the harm of pollution and noise and criticized some factories which were not taking environmental protection work seriously and called on these factories and the leadership at all levels in Peking to oversee environmental protection work and quickly adopt stern measures to eliminate pollution and noise and to protect the physical health of the masses.

Liu Chia /0491 0857/, an inhabitant of Feng District outside Fu-hsing /1788 5281/ Gate said in a letter: My house is near the Peking Steel Factory which is under the Bureau of Metallurgy. The Peking Steel Factory sends yellow smoke up into the sky and it blows all over the place. Every afternoon the smell of asphalt is very thick and in the summer all we can do is close the windows. All night there is the constant noise of bellows so that there is no way a person can get to sleep. He said: In the past few years the noise and pollution has become more and more severe, and the conflicts sharper and sharper, making old people such as me who suffers from several illnesses very troubled...

Pollution is also very injurious to farmers and agricultural production in the suburbs. A member of the Po-sui-ying /1319 2979 3602/ Brigade at Wang-ssu-ying /3769 0934 3602/ Commune in Ch'ao-yang /2600 7122/ Ward said in a letter: The three streams of polluted water which come from the Peking Coking Plant and the Peking Dyeworks which belong to the Bureau of Chemical Industries run from south to north through our brigade's land and in the summer the stench is overpowering. Added to this are a dozen or more

smokestacks belonging to these two factories spewing smoke, coking gasses, and poison gas which fill the air over our brigade. The smoke is dense and the smell is very sharp, injuring and/or affecting the health of our brigade members. After the crops are polluted, the wheat does not fill out adequately: the kernels are empty and production is low; the vegetable oil crops produce flowers but little fruit; the cucumbers and tomatoes clearly are diminished in production volume; the fruit trees either set little fruit or set no fruit at all. Despite the fact that every year the factories compensate people for losses, we still don't want to be poisoned.

Since the Environmental Protection Office was established, every year over 200 letters are received from people like this. Over 100 enterprises and units have been mentioned, including chemicals, fertilizers, electroplating, iron and steel, plastics, leather, metals and light textiles.

As this reporter understands it, the questions reflected in letters from the masses can largely be divided into three categories: the first includes those which can be corrected with a little effort; the second includes those that can be corrected with the help of a small amount of materials and equipment and with a certain effort, or with somewhat greater effort; the third includes those that are for the time being somewhat harder to correct because of limitations of technology, equipment, investment or other factors; Some are questions of geographical distribution of industry and require either reform or transfer. Those in the first and second categories are the majority and those in the third category, the minority. In actuality, some industrial pollution is severe and for a long time has not been corrected, but with mass criticism, once the decision is made the situation changes greatly. Last year of 200 letters received, only 10 complaints were corrected. In the first quarter of this year, 57 letters were received and as of now only five have been corrected. The overwhelming majority of units correct these problems with exasperating slowness, and although they do a little work, the problem is not thoroughly corrected. For this reason, we earnestly hope that those units which already are seriously overseeing environmental protection work will shun pride and impatience and continue to advance; those units not overseeing with sufficient seriousness should conscientiously study Premier Chou's important directive and practcial experience in environmental protection work and thoroughly abandon the muddleheaded ideas of "if you have smokestacks, you've got to have smoke," "factories always have to get rid of wastes," "production is so busy there isn't any time for environmental protection," and begin to take very seriously the elimination of the pollution of the "three wastes." Those units which up to now have not been serious about eliminating pollution and have taken a position opposite to that of the masses should change their mistaken attitude as quickly as possible. We believe if only the factories concerned and the leadership at all levels take it seriously and solidly adopt effective measures, environmental protection work in the capital will certainly show a brand new face.

8226
CSO: 4008

STRINGENT SANITATION LAWS TO BE IMPLEMENTED

Buenos Aires LA NACION in Spanish 19 Jul 78 p 10

[Text] Tigre--The meeting of the Rio Reconquista Area Intermunicipal Council (CONINTAR) was held in the town's cultural center and was attended by the Chairman of the organization and administrator of the town, Col. Carlos Alberto Perez Ibarra (ret).

The reports on what has been done in connection with the so-called "Lineal Park" and the struggle against water contamination were analysed. Subsequently, the report submitted by the Secretariat for Planning and Development (SEPLADE) on the upcoming "environmental protection law" was discussed and it was noted that the bill will be approved in the near future.

Among the items which drew the attention of those present, reference should be made to the serious degree of water contamination caused by industrial effluents and the lack of an adequate infrastructure for liquid sewage treatment.

Dr Cesar Aguado Benitez, Secretary of CONINTAR, explained the resolutions adopted by the V National Sanitation Congress, held in the city of Santa Fe at the end of May of this year. He went on to stress the need for official budgets to take into account and grant high priority to public works designed for the treatment of industrial effluents. He also called for decisions on the means of funding such projects.

Lastly, he recommended that a national water law be passed to protect and preserve this vital resource by every possible means and that such plans be ascribed the outstanding importance their implementation merits.

7129
CSO: 5000

EFFECTS OF INDUSTRIAL WASTE GROWING CONCERN

Buenos Aires LA NACION in Spanish 18 Jul 78 p 6

[Text] La Plata--According to the terms of Law 9111, the executive branch in Buenos Aires has the final word in regulating garbage disposal in the 22 sections which make up the metropolitan area of the capital, "solely" by use of the sanitary landfill system and with the cooperation of the Cinturon Ecologico Area Metro;olitana Sociedad del Estado (CEAMSE) (Ecological Belt for the Metropolitan Area State Enterprise).

Under the same law, there is a ban on the depositing of garbage and recovered parts thereof, either in open or closed areas, and on the burning or incineration thereof. Similar prohibitions are applicable to any form of work connected with the recovery of residuals thereof and more specifically on the so-called chopping it up, even on private property.

The report issued by the Press and Propaganda Secretariat adds that this law is applicable to future concession or leasing contracts connected with garbage collection services which may be signed by the municipalities as well as to those contracts presently in force.

The sectors included under the terms of the law are: Vicente Lopez, San Isidro, San Fernando, Tigre, General Sarmiento, General San Martin, Tres de Febrero, Moron, Merlo, Moreno, La Matanza, Esteban Echeverria, Almirante Brown, Lomas de Zamorra, Quilmes, Avellaneda, Lanus, Florencio Varela, Berazategui, Berisso, Ensenada and La Plata.

Rates

These municipalities will pay CEAMSE whatever rate the organization charges for the work done on the land prepared for garbage disposal, in addition to any rate readjustments or fines for any delay in payments. Similar rates will be payable in respect of garbage dumped direct by private parties in the places prepared for disposal, but without the intervention of the concessionaire or person leasing the service.

Should the municipal authorities not fulfill their obligation as regards payment for the services, the law notes, the general accounting office of the province shall proceed to withhold the amounts owed and any other indebtedness from the funds due to the local bodies as their share in the rates and taxes collected by the province or their share of any funds accruing to the province.

Violations

Any violations observed will give rise to the sending of a notice by the municipality involved, ordering the reconditioning and cleaning up of the unauthorized premises, or alternatively, to proceed with the sanitary landfill. Should the order be ignored, the municipalities are to carry out the sanitation work in the name of the violators and at their expense, while the violators may be arrested for a minimum period of 10 days.

Moreover, sanctions will be applied against those who dispose of waste material of a solid or liquid nature (dirty water, sewer waste and the like) or waste of any other kind or origin at sites which are not particularly well suited. The violator's arrest shall be for a minimum period of 3 days and a fine is to be levied, in addition to seizing the vehicle used in the violation and canceling of the individual's driving license on a temporary or permanent basis.

7129
CSO: 5000

ECOLOGICAL IMPACT OF DAMMING PARANA RIVER ASSESSED

Sao Paulo VEJA in Portuguese 19 Jul 78 pp 58, 60

[Text] By the end of the year on a date not yet set, hundreds of sticks of dynamite will divert one of the strongest stretches of the Parana River, 14 kilometers from the Parana city of Foz do Iguacu, into a 150-meter wide and 2-kilometer-long channel in order to permit the project of the largest hydroelectric plant in the world, Itaipu, to proceed in the river bed thus drained. Witnessed by many international authorities, the historic explosion will represent a decisive stage of the Brazil-Paraguay energy project. At the same time, however, it will unleash a combination of inevitable changes in the ecology of the region common to all projects of that type: interference with the so-called ecosystem of the water and consequently with the life of many species of fish, displacement of fauna to another environment, changes in the microclimate and the saline content of the deep waters. And the question assumes added importance because of the fact that Itaipu is located in Parana, a state that by 1990 will have no less than 7,000 square kilometers of very fertile land, something equivalent to the territory of Lebanon, flooded by the artifical lakes of the hydroelectric plants.

The surge of dams that is devastating Parana is taking place mainly on the Iguacu River, which extends from the fringes of Curitiba to the majestic falls on the Argentine border 1,045 kilometers away and whose flow of water, presently dammed or about to be dammed by six hydroelectric plants, must still bear the construction of 15 more. But it also affects the Capivari River (one dam for the time being) and especially the Parana River itself (three dams, including Itaipu). In June, Minister of Mines and Energy Shigeaki Ueki authorized studies on the utilization of the 38-meter grade that exists between the Jupia dam in Sao Paulo and the Sete Quedas fall or Guaira in Parana, which would imply transforming it into a uniform succession of dams.

Different Environments

In order to assess to what degree the eqology of the region will be affected and, obviously, the corrective measures to be adopted, since Brazil's energy demands require that its hydroelectric potential be utilized, the Parana Economic and Social Development Institute (IPARDES) ordered a lengthy study

by the highly regarded Curitiba biologist, Ribas Lange. His conclusions, first of all stressed the need "to urgently establish a government agency within the public administration capable of studying the environment of our rivers, identifying their fish life, understanding the ecological impact of damming and, above all, capable of programming and implementing the correct ecological management of the lake-reservoirs." Some of these procedures are already common in the country -- last week, for example, a team of ecologists, biologists and mammal and reptile specialists contracted by the Sao Paulo Energy Company (CESP) began the rescue of many animals whose habitat was the 600 square meters flooded by the reservoir of the recently built Agua Vermelha power plant on the Rio Grande. But Lange is of the opinion that the peculiarities of each river that is dammed require a broader effort at the government level.

To illustrate that point, in the Parana stretch of the Parana River alone, where Itaipu is being built, there are two completely different environments from the biological point of view. The first is above Guaira; its waters are shallow and sprawling in addition to being interrupted by islands; the second embraces the 137 kilometers of the canyon below Guaira, with rapid and deep waters. Lange calls attention to the fact that the Sete Quedas fall or Guaira, which plays the role of an ecologial barrier in the region and influences its aquatic environment, establishing a balance between the tension of gases inside and outside the water, will simply be drowned by the Itaipu artifical lake.

Parasitic Diseases

Ecologists usually list as among the first consequences of the damming of the Parana rivers, the progressive extinction of migrating fish--those that have to migrate up-river to spawn--among which are the dorado and piracanjuba. And as a matter of fact, the sudden interruption of the currents have resulted in incidents such as the one that occurred immediately after the Ilha Solteira sluice gates were closed in 1973: whole schools of dorados struggled near the plant trying uselessly to go up river. In the absence of an official policy, as Lange desires, to avoid situations of that type, the experts are presently divided between artificial insemination for subsequent repopulation of the rivers with migrating fish, and the dissemination of species that can live in practically still waters. CESP, for example, has just announced its intention to stock the Agua Vermelha reservoir with thousands of newly hatched trairao, piaui fish, and fresh water sardines.

But along with such efforts taken to block imblances such as the sudden proliferation of piranha of which the dorado is a mortal enemy, there is also the risk that the damming of the rivers will favor species that transmit parasitic diseases. Geologist Riad Salamuni of the Federal University of Parana, for example, stresses that studies made by the Environmental Sanitation Technology Company of Sao Paulo (CETESB) on the impact of the dams on the environment detected foci of snails that transmit schistosomiasis, even in the Billings dam reservoir, the big artifical lake in the Sao Paulo capital.

And, according to him, there is already a latent danger of contamination of the future Itaipu lake-reservoir. According to the Secretariat of Social Welfare of Parana, in 1975 alone there were 103 cases of schistosomiasis in the city of Foz do Iguacu and 23 in Guaira. It is to be hoped that between now and the inaugration of Itaipu, the same technological care employed in the construction of the largest hydroelectric plant in the world will be channeled into freeing the Parana River of that added ecological affliction.

8711
CSO: 5000

ONE KILLED, SEVEN INJURED IN NORTHERN CHILE EARTHQUAKE

Santiago Chile Radio Mineria Network in Spanish 1030 GMT 4 Aug 78 PY

[Text] The strong seismic movement yesterday afternoon in the northern region killed one person, injured seven, destroyed many houses and damaged many others. The epicenter was located in the sea 690 km north of Santiago, off the coast of Copiapo, and the earthquake affected three provinces from (Valle) in the south to Cocopilla in the north. The intensity in the city of Copiapo was 7 on the 1-to-12 international scale, with a duration of 2 minutes 6 seconds. Ten percent of the houses cracked, and six were totally destroyed in Copiapo. Unsheltered families have been moved into the 11 September [word indistinct] of Copiapo.

Another city affected was (Copreindio), where the earthquake intensity was from 8 to 9. Seven houses were destroyed and 45 percent of the houses cracked. The hospital suffered damage to 60 percent of its structure and had to be evacuated.

In Taltal the earthquake registered an intensity of 5 to 7 and lasted 1 minute 35 seconds, causing houses to collapse; in (Salvador) the intensity was 7, causing identical damage.

The seismic movement registered 5 degrees in (Ballenar) and 4 in Antofagasta, Tocopilla and La Serena, with no damage. In Calama and Chuquicamata the intensity reached 4 to 5, with no damage.

All these cities in the northern region are calm and all public services, such as electricity, water and phones, were restored to normal last night.

CSO: 5000

BALTIC SEA CONFERENCE SCHEDULED FOR MAY 1979

Vil'nyus SOVETSKAYA LITVA in Russian 17 Jun 78 p 3

[Article by Lithuanian Deputy Minister of Reclamation and Water Management Yulyus Sabalyauskas: "To Protect the Baltic Sea Basin"]

[Text] An International Conference on Protecting the Baltic Sea Basin will be held in Finland in May of next year. Its organizing committee recently held its second meeting in Helsinki. The Deputy Minister of Reclamation and Water Management of our republic, Candidate of Technical Sciences Yulyus Sabalyauskas, participated in it and was elected a committee member as USSR representative. He told an EL'TA correspondent:

"In recent years, the Baltic Sea countries have been cooperating increasingly closely to solve problems of protecting the sea. And now the International League of Cities and Municipalities, the World Federation of Sister Cities and the Finnish league of cities have taken the initiative of organizing an international conference. Its slogan: 'The Baltic Sea -- A Sea of Peace and Cooperation'.

Taking part in the conference will be representatives of state and public organizations, cities of the Baltic Sea countries, scientists and workers in industry, and envoys of international organizations. All countries of the world will be able to take part in the conference. Its goal is to create opportunities for the representatives of Baltic Basin states and their cities, for those responsible for their living conditions and environment, to express their desires as to active participation in protecting the environment in the Baltic region, to analyze in depth the causes of Baltic Sea pollution and ways of reducing it, given the broad exchange of knowledge and experience. The plan is to work out basic principles for effective cooperation among governments, and between state, scientific and production organizations solving problems of protecting from pollution.

Active preparation for the conference is beginning in our country also. We will have something to say at it. The Soviet Union, together with other

Baltic countries who value the economy and the social and cultural values of the environment and the living resources of the Baltic Sea region, has signed a convention on protecting the Baltic Sea region. Approximately one month ago, there was a meeting in Tallin of representatives of all seven Baltic countries, which discussed the criteria and standards for hazardous substances discharged into the Baltic Sea. A special organ, the interdepartmental committee for protecting the Baltic Sea environment, was created.

The Soviet government pays a great deal of attention to protecting the Baltic. A special decree has been adopted which anticipates cessation of discharging polluted water into all cities and settlements and from all industrial, agricultural and other enterprises situated in the Baltic basin by 1985. Our republic is also faced with a great deal of work on carrying out this resolution. A total of 1,200 measures have been planned to eliminate Baltic Sea pollution, at a cost of about 400 million rubles.

It was for good reason therefore that it was suggested that the Soviet representative report to the plenary session of the conference on continued international cooperation in the area of protecting the Baltic Sea from pollution. A number of reports have been planned for the sections. Some of them will be given by representatives of state organizations and cities of Soviet Lithuania.

11052
CSO: 5000

UDC 502.55

POLLUTION CONTROLS IN MOSCOW

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 5, May 78 pp 31-34

[Article by B. S. Kozyritskiy, Chief Specialist of Mosgorispolkom: "The Plans Have Been Compiled, the Matter Depends on Realization"]

[Text] In the middle of last month at the VDNKh SSSR [Exhibition of Achievements of the National Economy of the USSR] the Moscow municipal scientific and practical conference took place which examined the main directions in the work on environmental protection in light of the solution of the task on converting the capital into a model communist city. The questions touched upon in the published collection of articles comprised only a part of those that were heard in the reports of the participants.

At the plenary and section meetings questions were covered on protection of reservoirs and sources of water supply of Moscow, protection of air basin from contamination, landscaping of the city, control of noises and vibrations, as well as creative cooperation in this direction of different enterprises and organizations. The participants of the conference discussed and adopted recommendations towards intensifying the protection and improvement of the environment.

Summary materials comprised the basis for environmental protection activity of the capital's enterprises, organizations, and institutions for the immediate years. These materials will promote the solution of the tasks related to preservation of the cleanliness of the environment.

In the next issues we will discuss in detail the work of this conference, and will attempt to clarify the most important reports.

Among the world's largest cities Moscow is one of the cleanest. Work to sanitize the environment in our capital has been conducted for a long time and systematically. But it was intensified especially after the eighth session of the Mossovet [Moscow City Soviet of Workers' Deputies] of the 13th summons which confirmed specific measures for the Moscow enterprises and organizations for 1973-1978 for environmental protection. During this period at all the Moscow enterprises it was planned to construct or to reconstruct facilities for treatment of industrial and surface sewage, to equip the sources of industrial discharges into the atmosphere with dust-collecting and gas-treatment units, and to create at a number of enterprises systems of circulating and return water supply. At the same time it was planned to remove beyond the city limits plants and individual shops harmful in a sanitation-hygienic respect toeliminate small boilers with the transfer of consumers to centralized heat supply, to introduce at many enterprises more advanced technological processes that guarantee a reduction in harmful discharges into the atmosphere, and so forth. Coordination of the activity of the capital's enterprises and organizations in this direction was invested in the newly created interdepartmental scientific technical council for environmental protection, rational use of natural resources in Moscow and in the forest and park protective belt.

Much of the plan has been done. In 1973-1977 over 190 million R were spent for these works.

By playing an important role the aforementioned measures were included in the plan for the socio-economic development of Moscow according to which in 1976 the Five-Year Plan of work for environmental protection was approved by the joint resolution of the CPSU MGK [Ministry of State Control], CPSU MK [Ministry of Culture], Mosgorispolkom [Executive Committee of the Moscow City Soviet of Workers' Deputies] and the Mosoblispolkom [Executive Committee of Moscow Oblast of Soviet Workers' Deputies].

The energetic efforts of the party, soviet, economic organs, and scientific and technical community were not in vain. The problem of cleaning the capital's reservoirs is being successfully solved. Since 1973 in Moscow at the industrial enterprises 450 water-protection facilities have been constructed and reconstructed, a considerable length of the bed of the Moscow River and the Yauza have been cleaned, and at a number of their tributaries estuarine facilities and sluice gates have been installed, the discharge into the city's reservoirs of untreated domestic sewage has stopped, and the water of the capital's rivers has begun to be used for domestic and general purposes.

At the same time certain Moscow enterprises have disrupted the established periods for the completion of work on the construction of treatment facilities and systems of circulating water supply. At the facilities of the RSFSR Minpishcheprom [Ministry of Food Industry], for example, until now six of the eight water protection facilities have not been constructed which were planned for putting into operation. From year to year periods

are disrupted for completion of construction on treatment facilities at the plant "Svoboda" and the Moscow fat kombinat, and the facilities have not been constructed at the experimental plant of perfumes and the inter-republic wine-making plant. Enterprises of the RSFSR Minmyasomolprom [Ministry of Meat and Dairy Industry] have fulfilled work only on six water protecting facilities of the 12 planned for putting into operation. The Moscow meat packing plant and the Ostankino dairy plant continued to discharge polluted effluence into the municipal sewer system and drains.

Construction is being implemented slowly of the treatment facility of the enterprises of the Glavmospromstroymaterialy [Main Administration of the Building Materials and Structural Parts Industry of the Mosgorispolkom]. The established periods have been disrupted for introducing the water-protecting facilities at the Cheremushkinskiy and Kotel'skiy brick yards, ZhBI-7 and ZhBI-18.

Many inspecting organs control the course of the construction of water-protection facilities at the city's enterprises, nevertheless there are many cases when the directors of the enterprises and organizations violate the periods established with their agreement of the realization of the measures. One would like to believe that despite a certain delay in the next 2-3 years the equipping of all the industrial facilities with water treatment works will nevertheless be completed.

According to the data of the municipal Sanepidemstantsiya (SES) [Sanitary and Epidemiological Station] only 25% of the investigated active treatment facilities are operating with efficiency close to the plan. The main reasons for the unuse of the capacities--unsatisfactory organization of the work of the service of operation and accounting in the planning decisions adopted.

At many enterprises the special service for the operation of the treatment facilities exists formally. Their operation according to plurality is commissioned to other sections as if as an additional load to the main work. There is no production and laboratory control. Usually under such situations those responsible for the operation of the treatment facilities refer to data of analyses of the rayon SES, which, naturally, are conducted on the order of testing according to the parameters and the schedule of the actual sanitation service, and not for the observation of the production processes. Specialists are encountered who do not even know of the existence of instructions on the operation of the treatment facilities.

In our time such an attitude towards water-protecting facilities is impermissible. The directors of the enterprises must understand that the treatment facilities are a continuation of the main production cycle. Experience has shown that a negligent attitude to water-protection facilities will result not only in pollution of the environment, but also in a loss of valuable raw material. As a result of the studies of the Institute of Minerology, Geochemistry, and Crystallography of Rare Elements it was revealed that residue of treatment facilities and bottom deposits contain considerable quantities

of cadmium, silver, vanadium, and others. To preserve these valuable metals a deeper treatment of sewage is required which is not provided for in the reconstruction of enterprises. The situation will not be changed if the designers will not strive for wasteless technology, one of the most important elements of which is the treatment facilities. The unfinished state of the production processes will result in the fact that many enterprises of the city do not know how to get rid of industrial wastes and residue.

Often the technology of disposal, elimination, or utilization of many types of waste has not yet been developed, i.e., it drops out from the main production process. Here often it is necessary to discharge them into the municipal sewage system, transport into the forests, to vacant lands, and so forth. Municipal dumps that occupy currently over 300 ha and are located in the Moscovskaya oblasts are overloaded and cannot accept all that the enterprises would like to transport.

The noted deficiencies should be corrected by the joint efforts and resources of the interested organizations. Recently the Ispolkom of the Mossovet [Moscow City Soviet of Workers' Deputies] adopted a decision on the construction of a point for the reprocessing of unusable waste of petroleum products. Analagous centralized points for the reprocessing, recovery, or disposal of individual groups of waste, apparently should be organized for certain industrial zones or production associations. The department of scientific research, planning and technological institutes and major enterprises must begin this work.

A good example in this respect can be the plan introduced at the I.A. Likhachev Automobile Plant, where under conditions of the active enterprise the question of treating sewage and the recovery of wastes of production were comprehensively solved. The measures taken at ZIL [I.A. Likhachev Moscow Automobile Plant] promoted a reduction in discharge of water by 35,000 m^3 per day, and guaranteed to the enterprise an annual savings of 1.5 million R. Such an approach to the questions of environmental protection must be at each Moscow enterprise.

However it is possible, as they say, to count on ones fingers the successful solutions of the planners in the technology of treating industrial and surface sewage that have appeared in recent years. Moreover it should be added that they satisfied mainly the requirements of yesterday, when the main struggle was conducted against such pollutants as petroleum, oil, suspensions, and certain heavy metals (copper, chrome, nickle and zinc). Now the pattern has changed. During the last Five-Year Plan the industrial enterprises have been significantly reequipped. The assortment has noticeably expanded and the volume of industrial production has increased, many production processes have been altered, and other raw materials and materials have begun to be used. At the same time scientific and research development on the questions of treating sewage and reprocessing of residue and wastes are being prolonged for a considerable time, and their introduction is being conducted extremely slowly.

A no less important task for environmental protection is the preservation of the cleanliness of the city air basin. In Moscow a large number of enterprises, different branches of industry are concentrated. Annually the volume of products produced by them increases, and the number of automobiles rises intensively. At the same time the condition of the atmospheric air is not impaired. The preservation of the cleanliness of the air basin in the capital has become possible due to the realization of measures on environmental protection.

The construction of new and powerful TETs in Moscow has made it possible to eliminate thousands of small municipal boiler houses that discharged hundreds of tons of ash. The capital's power engineers are conducting great work on the setting up of the optimal furnace patterns, and the putting into order, and reconstruction of ash-trapping devices. Nevertheless in this branch also not everything that has been planned is being fulfilled on time. TETs No 9, 12, and 26 for example, are not developing all the means allocated for environmental protection.

Now at the industrial facilities of the city about 13,000 dust-and-gas-collecting units are in operation. Dozens of the capital's enterprises have sharply reduced the discharge of harmful substances into the atmosphere. Three-four years ago the Moscow copper-smelting and copper electric hotplate plant was one of the main sources of air pollution. Now, according to the data of the Moscow regional state inspection for control of the operation of dust-collecting and gas-treatment units only three sources not equipped with treatment units remain at the enterprise.

Back in 1976 increased pollution was noted in the territory surrounding the plant "Serp i molot." Tests made last year after the elimination of the open-furnaces indicate that the harmful effect of the discharges has been significantly reduced. The quantity of sources of pollution has been decreased also at other major plants of the city.

Only two decades ago the main offenders of atmospheric pollution in the major cities were industrial enterprises and boiler houses. Since recently the situation has significantly changed. Now, according to the opinion of specialists, the main source of pollution of the environment has become automobiles. They discharge up to 80% of all the carbon monoxide entering the atmosphere of our city. It is natural that the scientific and engineering-technical community of the capital began to worry. The automobile plants began to be intensely equipped with diagnostic, gas-analytical, and other equipment to test and regulate motors for toxicity. Now the majority of the Moscow automobile transport enterprises are equipped with all that is necessary so that each automobile goes out into the capital's streets with correctly regulated apparatus. And nevertheless in certain automobile plants this question is approached formally. This indicates the selective checks that are made by the deputies of the Mossovet with the participation of GAI (City Automobile Inspection).

Thus for increased content of carbon monoxide and smoking up the workers of the state automobile inspection in 1976-1977 removed 179 number signs from automobiles in the service station No 3 of the Mostorgtrans [Administration of Commercial Transportation of the Main Administration of Trade of the Ispolkom of the Moscow City Soviet of Workers' Deputies]. Unfortunately one can site many such examples. Now tests are being made on the automobiles of the Mosavtolegrans and Glavmosavtotrans [Main Administration of Automobile Transportation of the Mosgorispolkom] of the first batches of neutralizers of harmful substances developed in the TsNILTD. They promote a considerable reduction in the toxicity of exhausts. Before 1980 on the transportation means of the capital extensive operating tests will be conducted of 10,000 such neutralizers.

Great hopes of the Muscovites are associated with the bottle-gas driven vehicles which have been commissioned to significantly reduce the discharge of harmful substances into the atmosphere. But here there are also many problems that delay the introduction of gas-powered vehicles. As a result now in Moscow only about 6,000 automobiles are operating on gas. Apparently now the specialists should pay special attention to the work to prevent pollution of the environment in the capitol by automobile transportation.

The removal from Moscow of certain industrial facilities has had a favorable effect on the sanitation of the environment. On the map of the capital one can no longer find an experimental chemical metallurgical plant. The foundry-chill mold shop of the plant of aluminum alloys has left Moscow. The production of certain dyes and intermediate products has been removed from the Dorogomilovskiy chemical plant...this list can be continued.

By conducting great work in environmental protection the Muscovites are making a weighty contribution to the conversion of the capital into a model communist city. Our further task--achieve realization of all the measures provided for by the program of the socioeconomic development of Moscow.

PHOTO CAPTIONS

1. p 23. Four-section settling pond in Orekhovo-Borishova has been well incorporated into the surrounding landscape.

2. p 33. Settling pond on the river Serebryanka in Ivanovskiy.

3. p 33. Electro-filters with efficiency 99.6% at TETs-20.

4. p 33. At the busy intersections of the capital units have appeared that test the condition of the air.

5. p 34. Complex of treatment facilities at the Voykov pig iron casting plant.

6. p 34. At the No 7 taxi yard during servicing of the automobiles all the systems of the motor are checked which affect the toxicity of the exhausts.

PHOTO CAPTIONS

7. p 34. Hydrodynamic filter of capacity 20,000 m^3/hour has been installed in the preparing section of the Losinoostrovskiy electro mechanical plant.

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UKRAINIAN ENVIRONMENTAL PROTECTION PROGRESS SLOW AT GRES'S AND TET'S

Kiev RABOCHAYA GAZETA in Russian 16 Jun 78 p 4

[Article: "To Do on Schedule What Has Been Planned"]

[Text] The board of the Ukrainian SSR Council of Ministers' State Environmental Protection Committee has discussed the problem of progress in carrying out party and government decrees on the protection and efficient use of land in Voroshilovgradskaya Oblast. Ukrainian SSR Deputy Minister of Sovkhozes A. P. Lysenko and the chief of the oblast environmental protection inspectorate, S. S. Gunchenko, gave reports.

A check has showed that sovkhozes of the Voroshilovgrad area are concerned about improving soil fertility. In 1976-1977, they put 3,600 ha of previously fallow land into rotation. Some 400,000 ha annually is cultivated to protect the soil. Assignments on the creation of forest strips for field protection and on foresting ravines and gullies are being carried out successfully. Last year, 1,500 ha of reclamation forest was planted.

But there are still serious shortcomings in land use. On a number of oblast farms, the complex of measures to increase soil fertility is not being carried out and there is no dibbling or noncontinuous harrowing at all. Sovkhozes are building absolutely no anti-erosion hydraulic facilities.

The necessary attention is not being paid to the water-protecting zones of small rivers and reservoirs. On Pravda and Pobeda sovkhozes in Novoaydarskiy Rayon, the floodlands of the Aydar are wide open right up to the water's edge, so the river is silting and being polluted. Sanitation regulations on storing toxic chemicals are not being observed.

Purification facilities are clearly underestimated. Thus, Kremenskoy Sovkhoz-Combine was accepted for operation back in 1975, but it still has no purification facilities. Sovkhoz imeni Voroshilovgradskaya Pravda is also coping poorly with this matter.

In its decree, the state committee board noted the inadequate work of oblast sovkhoz trusts on conserving land and focused the attention of the republic Ministry of Agriculture on its services' unsatisfactory supervision of implementation of anti-erosion measures.

It was recommended that the Ukrainian SSR Ministry of Sovkhozes strengthen its supervision of the complex of anti-erosion work by all subordinate enterprises and that skilled specialists be added to farm staffs for that purpose. The oblast environmental protection inspectorate, it suggested, should establish strict supervision over actualization of party and government resolutions on land protection and efficient use.

A report by Ukrainian SSR Deputy Minister of Power and Electrification A. M. Solov'yev on steps to prevent pollution of the Severskiy Donets, groundwater, and the air basin near Lisichansk, Severodonetsk and Rubezhnyy in Voroshilovgradskaya Oblast and near Slavyansk in Donetskaya Oblast was then heard and discussed.

The Ukrainian SSR Ministry of Power and Electrification has worked out and is implementing measures aimed at keeping the Severskiy Donets, groundwater and the air basin clean. A 2,400 m^3/day installation for purifying contaminated discharge has been put into operation at Severodonetskaya TETs; construction of a station for biological purification of household-farm wastes has been completed at Lisichanskaya TETs. Introduction of a compressed-slag station will enable us to reduce fresh water consumption by 73,000 m^3/year.

A farm-household sewage system with biological purification has been built at the Slavyanskaya GRES imeni 50th Anniversary of October. Steps have been taken at the Severodonetskaya TETs to ensure reliable protection of the air and water basins from pollution.

However, not everything is being done as life demands. Construction of the Slavyanskaya GRES ash dump is still not finished; the coal-dust boilers at the Severodonetskaya GRES have still not been replaced with gas and fuel-oil boilers and the electric filters have not been rebuilt, although these jobs were to have been done in 1977. There have been few steps to prevent air pollution.

The state committee noted a lack of proper concern for carrying out environmental protection measures in full and on schedule at enterprises of the Ukrainian SSR Ministry of Power and Electrification. For example, solution of important problems like cleaning flue gases at Lisichanskaya, Severodonetskaya and Rubezhanskaya central heating and power plants has been delayed. The work has been underway since 1976, but the end is still not in sight.

The Ukrainian SSR Ministry of Power and Electrification is obligated to intensify its supervision of actualizing all the measures planned, to accelerate construction of gas purification installations of Severodonetskaya TETs and finish construction of the Slavyanskaya GRES ash dump.

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POLLUTION ALONG THE DNEPR RIVER

Kiev RABOCHAYA GAZETA in Russian 30 Jun 78 p 4

[Article by O. Dudnik, inspector of the oblast inspectorate for the protection of nature; V. Sytnik, deputy chairman of the oblast organization of the protection of nature society; V. Taran, inspector of the state inspectorate of the Lower Dnepr; D. Nosach, engineer of the production administration for land reclamation and water management; M. Khavronenko, physician for public hygiene of the Svetlovodskaya sanitary epidemologic station; N. Yeremenko: "Against the Waves--Planting of Trees"]

[Text] Svetlovodsk, Kirovogradskaya Oblast. Some 170 km from Svetlovodsk up to Kanyev streched the Kremenchugskoye reservoir. At the Dnepr cascade it was assigned a special role--to regulate the filling of the Dneprodzerzhinskoye, Kakhovskoye and Zaporozhskoye reservoirs.

This man-made sea is already two decades old. But it is still quite young. As the specialists say, it is still in its formative years. The waves gradually wash away the right bank, and it, unable to withstand the onslaught, recedes. In the northwestern outskirts of Svetlovodsk over an expanse of half a kilometer the shore has receded by 10-15 meters, and in various places--by 300 and even more.

Three years ago a hydrological expedition of the Ministry of Land Reclamation and Water Management based on research and forecasts prepared information "On the Redesigning of Tree Planting in the Shoreline Zone of the Kremenchugskoye Reservoir." It states that the right bank portion extending 45 km, where the shore slopes present eroded plateaus and high level terraces, for the period in which the reservoir has been in operation, 340 hectares of land have been lost, 220 hectares of which is from the state forest reserves. When the shoreline will be completely formed the landslip area will reach 830 hectares. On several shoreline slopes both forested zones and large tracts of trees will crumble away.

The task is this. If not everywhere, then we must at least fortify the shore wherever possible to save it as far as possible from the destructive forces of the waves. And it is important that in Svetlovodsk significant

attention is being devoted to this matter. When a hydroelectric station was still under construction, protective tree planting began. Now 62 km of shoreline included in the Svetlovodsk forestry felling area are completely overgrown and already 42 km of the shore are no longer subjected to disaggregation. Breakwater tree planting has grown thick along 16.6 km of shoreline.

State protective tree plantings occupying more than 1,500 hectares, as outlined in the plan, along the shoreline represent an elongated 67 kilometer strip varying in width from 50-300 meters.

The enterprises and organizations are developing measures and allocating funds for environmental protection. In just the last five years effective sewage treatment plants appeared at pure metal plants, at the lime-silica structures plants and at the lead enterprise of the steam power industry production association, Dneprostroyindustriya.

Sanitary inspection organizations set up a sanitary rating system, a map-diagram of water resources and sources of pollution and determined points for taking tests. Hydrochemical and bacteriological research on the water is carried out in every quadrant. Regular control is maintained over the technical efficiency of local sewage treatment plants in the cleansing of industrial effluents. From the results of research and observation concrete measures are being developed for the sanitary protection of open bodies of water.

Society is being widely drawn into protecting the environemnt, especially the waters on the Dnepr. Explanatory and educational work is actively being conducted. And so, since the beginning of this year more than 20 lectures on the protection of water resources have been given. Among them are "The Dnepr's Water Must Be Clean," "Water--the Source of Life," and others.

For actively conducting natural protection work, the primary organization of the society to protect nature at the pure metals plant last year took third place in the republic.

A shoreline work crew, however, exposed some unpleasant facts. Several enterprises are dumping run off effluents and condensate from the boiler drainage along with petroleum product contaminants into the Tsybulyevskiy Strait. At the Kolkhoz imeni Chapayev on a stock breeding complex the sewage treatment plants are quite primitive. Therefore on occasion impure water enters the reservoirs from here. At a number of kolkhozes warehouses containing fertilizer and toxic chemicals do not respond to requirements and rains can wash away some portion of these chemical compounds and carry them into Dnepr waters. Most of all this concerns the Kolkhoz imeni Kuybyshev. Instances have been recorded when fecal matter and other pollutants were dumped into the navigable channel.

The people of the Svetlovodsk love their city and much is being done to see that it is beautiful and well-managed. In particular, the collectives of the enterprises and organizations on their own initiative have taken upon

themselves the laying of rock along almost one half a kilometer of shoreline to protect it from destructive forces.

In conclusion we would like to express some things to be considered. The republic has a whole series of departments involved in protecting natural riches. They efficiently carry out major and quite minor work. But this work would be considerably more effective if an organ was created that would coordinate all this work--in a manner that would be complex, on a large scale and far reaching.

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GROWING PROBLEM OF URBAN NOISE POLLUTION

Moscow MOSKOVSKAYA PRAVDA in Russian 10 Jun 78 p 3

[Article by Ye. Gurnova: "Quiet in the City: Is This Possible?"]

[Text] Quiet, like clean air, is becoming more difficult to find in the city. Practically every citizen constantly lives in a world of intense noise. Up to 65 decibels is the permissible hygienic level, from 65-110 decibels noise becomes a human health hazard (it irritates the central nervous system), and above 120 decibels illness begins. A street with heavy traffic achieves a noise level of 90-100 decibels and the walls of a house can only hold back half of this avalanche of noise, the windows only a quarter.

Thus, at home, at work, when out walking we constantly subject our health to noise dangers. It has been established that noise disrupts the normal activities of all organs--from blood circulation to vision, from the stomach to supplying blood to the brain. The mind especially suffers.

Is there an effective protection against this illness of the century? To completely isolate oneself from sounds is impossible, but this is not necessary (absolute silence is just as harmful). However, now the noise situation in the cities is such that even the most uneconomical means to protect against harmful decibels are useful when speaking about people's health.

For a long time our country has waged a consistent battle against municipal noise. The USSR Council of Ministers approved a number of decrees obligating managers of enterprises, construction sites, and transportation organizations to adopt the necessary measures to decrease the effect of noise on the city environment. In the principles of the Legislation on Health Care the task has been placed before all local councils and state organizations to use all possible means to reduce the noise level in industry, in homes and public buildings, outside, on city streets and squares.

When modernizing old and building new cities the architects strive to territorially limit industry in residential zones. In Moscow, for example, in accordance with the general municipal development plan establishment of several industrial zones is planned. Those enterprises that especially nega-

tively influence the environment are being either eliminated or moved beyond the capital's borders. For those new cities in the planning stage functional zoning of their territory has been outlined. Such an approach has allowed for a decrease of background noise to the hygienic permissible level in the living quarters of Tol'yatti, Naberezhnye Chelny, Navoi, Ust'-Ilimsk, Solnechnogorsk, Nizhnekamsk and many other new industrial cities in the country.

For these purposes expensive municipal construction experiments are being initiated. In particular, presently in Moscow a new microrayon is being set up, where according to calculations of the project's creators, the inhabitants will be provided complete silence by putting all transportation arteries under ground. Checks are being conducted for noise on a new type series of homes using materials designed for increased sound insulation.

Quite recently a model of a "quiet" house was designed by our architects and engineers. At present this experimental model is being built on one of the capital's main routes carrying high intensity traffic. The idea of the struggle with noise here is being resolved very simply. By taking into account the original interior plans good sound insulation is being achieved in the bedrooms, children's rooms and study. All these places are situated on the quiet side of the house. At the same time for the first time glass of varying thickness has been placed in the windows which have been set further apart. Acoustic experts say that this somewhat dampens external sound vibrations. If the estimates of the experimenters in the "quiet" house are confirmed and show that street noise will really not ruin the calm of its inhabitants, then such houses (obviously not of one but of varied architectural designs) will be constructed on the noisier streets. Under their cover in the depths of the living quarters the usual homes, kindergartens and schools will be built.

The planting of vegetation is a very effective noise barrier. It has been established that noise waves in areas planted with trees and shrubs weaken by 10 decibels for every 30 meters while the noise level in open space over the same distance shows virtually no change at all.

These greening programs are an inherent part of the social development of our cities. Special services continually keep watch over conditions on the greening detail. During fall and spring, with the voluntary efforts of the people, tree and shrub planting is conducted on the streets and squares in the residential areas. New parks and squares are being put in and older ones are being modernized and expanded. Where new apartment house construction is under way the buildings, as a rule, are placed at least 100 meters from the city's transportation arteries and industrial enterprises.

Obviously there are other ways to lower background noises in cities. For example, we can place limits on noise sources and design them better. However, the long range outlook here is not great. Even if a city changes over to electrically driven cars the rustling of tires along the asphalt (especially at night) will, as before, disturb the quiet of its streets and squares.

The most effective thing in the struggle to combat the dangerous decibels is in the complex utilization of all these means. It is just in this direction that Soviet specialists are working in close collaboration with architects, construction workers and designers to combat noise.

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SEWAGE TREATMENT PLANT PROBLEMS CITED

Kiev RABOCHAYA GAZETA in Russian 7 Jul 78 p 4

[Article by M. Proskurnya, chief of the Poltavskiy District State Water Inspectorate of the Upper Dnepr; V. Kaplun, chief of the oblast inspectorate for the protection of nature; B. Kolesnik, chief sanitary physician of Kremenchug; M. Asaul, director of the municipal department of the Poltavskaya Oblast Sanitary and Epidemiological Station; V. Lys: "Who's Disturbing the Psel?"]

[Text] Sewage treatment plants at the Kremenchugskiy Petroleum Refinery represent a powerful automated shop. In speaking about it we give it no less attention than the production sections. It's importance is really incontestable. After all the shop allows not even a drop of any petroleum product to enter the Dnepr. But, on the other hand, it "sorts" the industrial water and "returns" to the refinery 69,000 tons of petroleum annually. This provides a one million ruble savings to the state.

But despite these for the most part positive indicators, people here have not become complacent. At the refinery we heard about "minuses" in the recycling water supply system. For example, only one vaporizer pond occupies 320 hectares of land. For refining petroleum the refinery takes water from three artesian wells and from the Dnepr. On the whole the enterprises annually "consumes" 2,190,000 cubic meters of water--and this is an entire river!

But the Kremenchug refiners do not want to be indebted to nature. Here they set out on a "technological campaign" to reduce expenditures of fresh water from the Dnepr for industrial production. Now the plant is developing an engineer scheme for installation of an apparatus and devices to aid in changeover from water cooling in sewage treatment plants to air cooling. Construction of an experimental production device for thermal processing of sewage water has begun. All this will allow for a decrease in water outlay of more than 5,000 cubic meters daily.

It is not by chance that we speak of the petroleum refinery. It is because for all enterprises it is an example of the regard for nature. As an example of this, with expert management it is possible not only to stop dumping contaminated industrial water into the river and water resources but also to

conserve the water from the Dnepr and underground sources. It is just in this complex manner that it is necessay to solve the problems involved in the protection and conservation of water resources.

The work of the sewage treatment plants at the Kremenchugskiy plant for technical carbon has been well set up. Incidentally, both of the mentioned enterprises are part of the system of the Ukrainian SSR Main Administration of the Petrochemical Industry.

These are good examples. But they are the only two for the oblast--two enterprises where the recycling water supply systems and the sewage treatment plants are considered as production shops.

A natural question is why so few? Perhaps other enterprises have not been allocated funds for constructing sewage treatment plants? But this is not the case. At present we cannot speak about refusal of funds for such extremely necessary projects. The environment must be clean and healthful. This is a concern of our party and state It is obvious that the culprits must be found among the poor business executives.

The Piryatinskiy vegetable drying plant of the Poltavskoye production association of the canning industry year after year has its effluents foul and pollute the Uday River. The Ukrainian SSR Ministry of the Food Industry allocated 440,000 rubles for construction of sewage treatment plants. Planned to go into operation even in 1977 were 14 sewage treatment plants with every type of sewage system having a capacity of 1,500 cubic meters of water daily. But even now these needed projects are not available and the plant's industrial water continues to flow into the river.

The general director of the canning industry association, I. I. Mikitenko, placed before us a thick folder of letters.

"Read them and everything will be clear without any explanations from me."

Yes, there is an entire "odyssey" of paper. As far back as 1974 the technical documentation for erecting sewage treatment plants at the Piryantinskiy vegetable drying plant was given to the general contractor, mobile mechanized column PMK-67 of the Poltavsel'stroy rural construction trust. And after three years a corresponding contract was concluded and financing was initiated at a bank. A month passed then two, a half year and the aforementioned PMK-67 still had not begun construction.

The alarm has been sounded on the vegetable drying plant. Letters came streaming into the Poltavsel'stroy trust and the Ukrainian SSR Ministry of Rural Construction. However, nobody responded to them. Even the authoritative departments found no time to answer the letters. And the general contractor stubbornly had no desire to commence building the sewage treatment facilities. The Ministry of Rural Construction "abandoned" them to the just created rural construction trust, Mirgorodsel'stroy.

And 1978 began. But there was no sound of saws at the sewage treatment plant construction site and again came the sound of pens writing. But this time the Poltavsel'stroy trust and the Ministry of Rural Construction are being "attacked" in letters. The Poltavskaya Oblast Inspectorate for the Protection of Nature at last received a response from the deputy minister for rural construction in the Ukraine, Yu. D. Gudzya. "The ministry has examined your letter on the construction of sewage treatment facilities at the Piryatinskiy vegetable drying plant. The Mirgorodsel'khozstroy agricultural construction trust has been instructed to intensify construction work on this project."

In reality this was a delicatly written answer because the Mirgorodsel'khozstroy trust not only failed to "intensify" construction work but even failed to accept the technical documentation for installation of the sewage treatment plants. And again from Poltava the letters began streaming into the ministry. In April the ministry responded that construction of the sewage treatment projects would be undertaken by the state farm special construction trust, Sovkhozspetsstroy.

And instead of construction, what we have had even right up to the present is a torrent of unavailing letter writing that has not subsided, while at the same time sewage water from the Piryatinskiy vegetable drying plant continues to pollute the Uday River.

The group of people attacking the present situation revealed many instances of an irresponsible regard for purification of industrial water even at the advanced enterprises. And so, the sewage treatment facilities at the Gadyachskiy cheese plant are in a woeful state. Equipment adjustment has not been done. The sides of biological lakes are crumbling. The workers of the state water inspectorate for the Upper Dnepr have time and time again suggested to the plant director, Larisa Ivanovna Fesik the need to fortify them (because the water has already begun to wash away kolkhoz fields). Fines have been levied. But that ill-starred "heap" is still there and the lakes have not been put in order. Therefore, in the area of this enterprise on the waves of the Psel, a river which the people of Poltava consider to be very pure, one can see brown spots of cheese and milk waste products dumped daily by the cheese plant. And the white-yellow slime flows far, far away polluting the river.

Here is another example. In the city of Kremenchug is a power engineering repair plant belonging to the ferro-concrete production association Kremenchugzhelezobeton. It is a small enterprise but it causes great damage to the Dnepr. This is because it is the sole "supplier" of petroleum products to the Dnepr and Psel. And the reason is not due to malfunctioning sewage treatment plants, but putting it mildly, to inefficient plant management, in particular by its director, I. N. Zaporozhenko, and its chief of the steam power shop, V. V. Vidomanov. And if we were to speak not gently but frankly, then they are committing gross poaching. By their orders they are dumping petroleum residue containing some 460 milligrams of oil in every liter of water in a water resource connected to the Krivaya Ruda River.

The time has come to include data about the work of sewage treatment plants in an enterprise's fundamental technical and economic indicators, we must calculate these when summing up the fulfillment of socialist obligations. Then the managers of enterprises and every member of the collective will increase their own responsibility for the protection of nature. Incidentally, this has already been accomplished at the above mentioned Kremenchugskiy petroleum refinery. Here they have even introduced a staff job, that of deputy chief engineer for the protection of nature.

As a rule, the poor work of sewage treatment plants occurs where there is an unwise regard for this matter, where natural protection projects are looked upon as being secondary and unimportant. That is to say, they do not fit into the production plan. But has this production plan been born only in the rumble of motors, engines and lathes? Couldn't they provide it with a clean stretch of river water, the fragrant air of a meadow, the green crowns of trees under a light blue sky. These gifts bring vigor, cheer and simply a good frame of mind to those who stand before those engines, motors and lathes...

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AKHTME SLOW TO PROTECT ENVIRONMENT NEAR POWER PLANT

Tallin SOVETSKAYA ESTONIYA in Russian 28 Jun 78 p 3

[Article by Akhtme TETs Director Yu. Kurm and by V. Vestung, a production-technical department head at the Iru TETs-2 under construction: "Clean Air for the City"]

[Text] It is known that grade-3 shale is the basic fuel for Estonian power plants. It is relatively cheap, and there are no special problems in its transport to its place of use. It is especially convenient for Akhtme TETs. The shale is supplied by belt conveyor from Akhtme Mine directly to the boilers. Good and convenient.

But, with all its good points, there are negative aspects. The fact is that a large amount of ash is not absorbed by the one-stage ash traps with which the older-design boilers were equipped, and it is discharged into the atmosphere through the smokestacks. Ash particles are precipitated onto the ground and have polluted not only the enterprise site, but also the nearby Akhtme portion of Kokhtla-Yarve. The Estpromproyekt has been working since 1968 on a design for cleaning flue gases using electric filters. Construction of the first such filters at Akhtme TETs has been underway for a number of years and was finished in early 1976. Four boilers were connected to the electrostatic precipitators.

This was a happy event not only for the TETs collective, but also for the people of Akhtme and for Kokhtla-Yarve greenbelt timber management workers. Start-up of the first line of electrostatic precipitators was a serious test for the entire boiler-turbine shop collective. In fact, each new machine and tool required adjustment and breaking-in, and so forth, and it was essentially a new shop with new equipment which was developed here. It often happened that the boiler-turbine shop chief, the shift chief and other workers spent all day and all night in the shop supervising the start-up and adjustment work.

It is known that the Estpromproyekt did not have much experience yet in designing electrostatic precipitators for power plant boilers using grade-3

shale as fuel. And the designwas naturally somewhat inaccurate. Our efficiency specialists came to the designers' aid. They were of substantial help to them just in starting-up the first line of precipitators, making about 10 valuable efficiency-improvement suggestions whose introduction did much to accelerate mastering this new and complex equipment. Central repair shop fitter K. Uustal' was especially noteworthy among these efficiency experts.

In the second half of 1977, the second line of electrostatic precipitators was put into operation at Akhtme TETs. The city's air improved even more.

However, much attention should also be paid to so-called secondary environmental pollution. For example, take just Akhtme TETs's nearest neighbor, the Akhtme Construction Materials Combine. It discharges a fairly large amount of ash into the atmosphere each day. The same could be said about the seasonal asphalting plants (which many cities have, incidentally). As soon as spring arrives, black clouds of smoke appear above Akhtme. These are the "seasoners" smoking, and very "strikingly." They should probably be tamed somehow.

The fight for a clean environment is painstaking and expensive work. It must be done constantly and systematically -- there can be no "campaigns" or compromises. The air in the cities must be clean!

11052
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MINENERGO SHARPLY CRITICIZED FOR POOR ENVIRONMENTAL PROTECTION WORK

Moscow SOVETSKAYA KUL'TURA in Russian 27 Jun 78 p 3

[Interview with Ye. S. Rychin by E. Grafov: "All Are Answerable for the Environment"]

[Text] Article 67 of the new USSR Constitution states: "USSR citizens are obligated to look after nature and protect its riches." The Communist Party of the Soviet Union and the Soviet state are constantly concerned about protecting the environment and using natural resources efficiently. Much attention was paid to these problems in the resolutions of the 25th CPSU Congress. Recently adopted CPSU Central Committee and USSR Council of Ministers laws and decrees on using natural resources efficiently and protecting the environment have created conditions for the most effective, scientifically substantiated use of those resources and for strengthening the protection of nature.

A joint meeting of the permanent environmental protection commissions of the USSR Supreme Soviet chambers was held recently in the Kremlin to examine the question of "Meeting the requirements of environmental protection legislation by enterprises of the USSR Ministry of Power and Electrification."

Why did the commissions decide to hear this particular ministry? The enterprises of this branch have a substantial effect on the state of the environment. Suffice it to say that they use more than half of all the water consumed by the nation's industry and municipal services. Also great is their discharge of power fuel combustion products into the atmosphere at electric power plants and central heating plants.

A SOVETSKAYA KUL'TURA correspondent asked Yevgeniy Sergeyevich Rychin, USSR Supreme Soviet deputy and assistant leader of the joint deputies' preparatory commission, to answer questions connected with this problem.

[Question] Yevgeniy Sergeyevich, one of the meeting's aims was apparently to comprehend the positive experience accumulated by the ministry?

[Answer] Undoubtedly. The more so, since there are quite important grounds for this. A number of organizational measures meriting attention have been taken. The Main Technical Administration for Operating Power Systems has been entrusted with leading and coordinating work on the problem of protecting the environment from thermal electric power plant discharges. An environmental protection department has been formed. A specialized enterprise for repairing, modernizing and adjusting gas purification and ash removal at thermal electric power plants, the Energoochistka, has been created. The special-purpose allocation of funds for purification equipment was planned for 1974-1980. "Technical rules for operating gas-purification and dust-removal installations" have been approved. Brigades for operational-technical servicing of purification facilities have been organized at a majority of the TETs's, and systematic improvement in worker skills has been organized.

[Question] Could you give some examples of practical, actual results?

[Answer] Yes, of course. In the Ninth Five-Year Plan and the first two years of the Tenth Five-Year Plan, considerable work was done on environmental protection measures to protect the air basins of the nation's largest industrial centers and the water basins of the Black, Azov and Baltic seas and the Volga, Ural and Tom' rivers. Enterprises of the USSR Ministry of Power and Electrification carried out 66 water-protection measures in these water basins, including the introduction of purification facilities capable of processing about 50 million cubic meters of water per year, which permitted a 12-percent reduction in the discharge of unpurified wastes for the branch as a whole. Facilities for removing dry ash, which is then used in construction and agriculture, have been installed at the Estonskaya and Pribaltiyskaya GRES's. The ministry is conducting scientific research on creating and mastering methods of reducing nitrous oxide discharges at existing boilers. Steps have been taken to reduce nitrous oxide discharges into the atmosphere 1.5- to two-fold at a number of installations of the Kostromskaya, Karmanovskaya and Syrdar'inskaya GRES's and other electric power plants. All power plants built in recent years have been equipped with new production discharge purification systems, and such systems have been renovated at a majority of the existing power plants.

[Question] The branch referred to is an important link in the national economy. Large scale, broad scope, and correspondingly significant financial resources are inherent to it. How do things stand on these questions?

[Answer] State capital investments of 671.2 million rubles are anticipated for the USSR Ministry of Power and Electrification in the Tenth Five-Year Plan to protect nature and use natural resources efficiently, including a planned expenditure of 562.43 million rubles on protecting and using water resources efficiently, 87.1 million rubles on steps to protect the air basin, and 21.72 million rubles to protect and use land efficiently and to protect and replenish fish resources. Moreover, branch enterprises are allocating significant funds of their own each year for the repair and renovation of nature-protection equipment and to improve technology.

[Question] Would you say that the commission meeting placed special emphasis on a critical approach, on analyzing shortcomings?

[Answer] Positive experience must be studied and disseminated, but one must not forget that much work still remains. Unfortunately, the ministry was called to account rather severely. Discharges of harmful substances into the atmosphere by enterprises of this branch comprise about 25 percent of all discharges of harmful substances nationwide. The ministry has not utilized fully its capital investments for building nature-protection facilities. The plan for starting up purification installations in 1976, for instance, was fulfilled by only 52 percent. In other words, by half! Also impermissible is the fact that these capital investments are being utilized unevenly. For example, last year more than half the allocations made were utilized in the fourth quarter, which naturally had an impact on the construction and maintenance of gas purification installations.

[Question] Could you give specific examples of enterprises which have violated the norms?

[Answer] Certainly. Sumskaya TETs. It has become truly one of the basic sources of pollution of the city's air basin. At present, all three of the station's boilers are using solid fuel and discharge tons of ash into the atmosphere each day. This is vitally important to the city, but remains an unsolved problem. Approximately the same situation has evolved at the Astrakhanskaya GRES. It was also switched over to burning solid fuel at one time. But its 60-meter smokestack does not correspond to the new type of fuel. All requests by local party and soviet organs that a new smoke deflector be built have gone unanswered.

[Question] Yevgeniy Sergeyevich, this branch has a direct relation to water resources. Could you tell us what this interrelationship looks like?

[Answer] In spite of the requirements of the nature-protection legislation, the USSR Ministry of Power and Electrification has permitted a number of instances of the start-up of new production facilities without the necessary complex of water-protection installations. This was the case at the Fergan-skaya and Khabarovskaya TETs's and other power plants. At many electric power plants, in spite of the fact that they are polluting reservoirs with waste water, water-protection facilities are not being built, and at those projects where construction of such facilities has been begun, it is sometimes proceeding at very slow tempos.

[Question] In this connection, the question also arises of protecting fish resources?

[Answer] According to the USSR and union republic principles of water legislation, enterprises must take prompt steps to provide for the protection of fish and other water animals and plants and to ensure conditions for their reproduction. The diversion of water from fish-management reservoirs to meet

enterprise needs must be done only when special arrangements are made to prevent the fish from getting into the intake structures. However, such structures are sometimes imperfect and fail to provide the desired results. As, for example, at the Konakovskaya, Kostromskaya, Novocherkasskaya, Ali-Bayramlinskaya and other GRES's. The USSR Ministry of Power and Electrification is behind schedule on construction of experimental-production fish-protection installations at the Novocherkasskaya, Kostromskaya and Shaturskaya GRES's. As a result, work cannot be done to determine the effectiveness and possibility of using the planned fish-protection installation designs. The construction of compensatory fish-breeding projects is lagging behind construction of power facilities. Thus, the Kemskiy and Vygskiy fish hatcheries were built five years late. The fish by-pass complex attached to the Rizhskaya GRES for trapping and moving fish has not been put into operation on schedule.

[Question] And how is the ministry observing the land legislation?

[Answer] The requirements of the legislation on a thrifty attitude towards the national wealth, land, are violated frequently. The USSR Ministry of Power and Electrification is not taking agricultural production losses associated with construction of hydroelectric power plants fully into account. This was the case, for example, in construction of the Nizhnekamskaya GES. Insufficient work is being done on developing appropriate technological processes at power-engineering enterprises for the purpose of reducing the amount of land under reservoirs. There is inadequate recultivation of disturbed land, the rates of increment in which exceed the rates of restoration. Laying electric power transmission lines considerably complicates reclamation and agricultural work. The violation of land legislation testifies to the fact that the USSR Ministry of Power and Electrification is still paying insufficient attention to a thrifty attitude towards land resources and, in many instances, to solving problems connected with land use, stemming from bureaucratic interests.

[Question] What, in your view, are the prospects for "interaction" between the positive experience and the shortcomings?

[Answer] The interests of the matter demand sharp stress on shortcomings and oversights. And, speaking of shortcomings, I have in mind not only the lagging enterprises, but also the leading ones. Leading enterprises must also be aware of the shortcomings of others, analyze them, and understand them so that they do not repeat them or become complacent. Complacency is a dangerous thing. And we are thinking here about something as precious as nature. Leonid Il'ich Brezhnev said at the 25th CPSU Congress: "...nature can be used in different ways. It can, as the history of mankind shows in many examples, be left as a barren, lifeless space hazardous to man. But we also can and must, comrades, ennoble nature and help it reveal more fully its vital strength. There is the simple expression known to all, "a blossoming land." This is what we call lands where people's knowledge and experience, their attachment to and love of nature have truly created miracles. That is our socialist path."

It is our common duty as citizens to take precisely this path.

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MOTOR VEHICLES AND THE ENVIRONMENT

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 5, May 78 pp 35-37

[Article by L. A. Yakovlev, head of the Administration of Light Automobile Transport of the Mosgorispolkom: "Motorists in the Struggle for Sanitation of the Environment"]

[Text] Recently the environment in the capitol has become much cleaner. This is a result of the activity of all the Moscow organizations and enterprises for environmental protection.

The collective of the Administration of Light Automobile Transport of the Mosgorispolkom [Executive Committee of the Moscow City Soviet of Workers' Deputies] (Mosavpolegtrans) is taking active participation in the struggle to sanitize the environment. It must not be otherwise. Possessing an enormous fleet of rolling stock (over 20,000 vehicles) the Mosavtolegtrans and its enterprises are directly responsible for the protection of the air and water basins of the city from pollution related to the use of automobiles.

An important prerequisite for the successful conducting of work in this direction was the concentration of transportation resources in major industrial facilities. In the same way conditions were created for the implementation of the main direction of the technical policy of the administration--organization of line methods of servicing the rolling stock on mechanized lines, and the extensive introduction of modern means of diagnosing the technical condition of the automobile.

But the matter, naturally, is not only in strengthening the material and technical base. The year of the 60th Anniversary of the Great October has been noted in our collective by the extensive scope of socialist competition for the transformation of the taxi yards and automobile kombinats into model transportation enterprises of Moscow.

The labor activity of the motorists even now is very important in the intensive work to improve the servicing of the population with taxi transportation, and the state, economic and other organizations--with light service transportation. An important component in the quality is the participation of the collectives in the sanitation of the natural environment in the city. In

recent years our collective numbering many thousands has contributed a lot of forces and resources into equipping the enterprises with instruments for diagnosing and regulating gasoline engines for the minimum toxicity of exhausts. Today at each of the 25 automobile plants of the administration not less than two stations are in operation--analyzers combined with the system of diagnosis or separate. And three such stations have been introduced into the No 1, No 8, No 11, and No 18 taxi yards. The apparatus of gas testing is mainly installed on all the sections of servicing, maintenance, and output of the automobiles onto the line. Nevertheless in the future we plan even more complete equipping of all of our enterprises with such instruments in order to reduce the periods for testing of automobiles for the content of carbon monoxide in the exhaust.

The extensive introduction of modern means of diagnosing require the conducting of great work to train and increase the qualification of operators for the diagnostic stations--a new category of workers that has appeared in the occupational structure of the collectives. According to a special program, in two cycles, we trained 160 people to be operators. Practice has shown, however, that not all of these specialists at first had the necessary knowledge and experience to effectively use the technical potentiality of the diagnostic stations. Now we are undertaking measures to improve the qualification and to study the experience of the best diagnosticians.

Until that time, as other automobile associations, we have to prepare operators by our own forces. By taking into consideration that the means of diagnosis are becoming more widespread it is necessary to solve this problem on a higher professional level. The diagnosticians must be trained by the PTU [Vocational and Technical School], and technical schools, while specialists of higher qualifications--VUZes.

The laboratory of diagnostics created in the administration of the No 7 taxi yard is rendering great assistance to the automobile enterprises. Here a good collective has been formed of energetic young specialists headed by engineer A. I. Nikitin, people, as they say, with a creative spark worried about their work. Employees of the laboratory are doing many useful things for the testing and adjusting of the diagnostic equipment, are competently consulting the operators and other specialists of the operating services on questions of the use of the instrument, and are creating and introducing the necessary devices and accessories of their own design. Recently a mobile diagnostic laboratory was created whose use made it possible to increase the efficiency and quality of the checks and regulations.

During a number of years the Mosavtolegtrans has been cooperating with the scientific organizations in research activity to reduce the content of carbon monoxide and hydrocarbons in the exhausts of motors, and to develop the optimal methods for regulating the systems of power and combustion. Favorable results have been provided by the cooperation with the Central Scientific Research and Design Technological Laboratory for Toxicity of Motors (TsNILTD). Its employees are constantly assisting our automobile plants to implement testing, regulation of motors for the minimum content of harmful substances in the exhaust, and development of means for diagnosing and making a gas analysis of the instruments.

Currently the Mosavtolegtrans is introducing a system developed by the TsNILTD for neutralization of exhaust gases (SNOG) of taxis, whose main elements are the catalytic neutralizer, apparatus for supplying additional air, testing and automatic control. The tests indicate that SNOG guarantees a reduction in the discharge of carbon monoxide by 80% and hydrocarbons by 50%.

The laboratory of motors the NIIAT [State Scientific Research Institute of Automobile Transportation] is introducing into the No 1 taxi yard a perfected carburetor K-126G whose use also reduced the toxicity of exhausts.

A useful role in the generalization of experience and preparation of recommendations has been played by the scientific and technical conferences on sanitation of the environment conducted by the administration in 1974 and 1976 with the participation of specialists of NAMI [Central Scientific Research Institute of Automobiles and Automobile Engines], NIIAT, MADI [Moscow Highway Institute],the Novocherkassk Polytechnical Institute, and the TsNILTD, as well as the examination of this problem at the technical council and the council of directors of the enterprises of the Mosavtolegtrans. In particular at one of the last sessions of the council of directors in February 1978 a thorough examination was made of all the main problems related to the use of the diagnostic equipment, the outlook and immediate specific directions for this activity, including the organization of stations for rapid diagnosis.

The painstaking work of many of our services for environmental protection has completely justified itself. The discharge of carbon monoxide into the atmosphere by automobiles of the Mosavtolegtrans has been almost halved and mainly contained in the norms set by the GOST 16555-70. Official data of measurements made by the TsNILTD at the No 7 taxi yard indicated that the content of carbon monoxide at idling of the motors on the average has been reduced from 5.5 to 2.16%; in the No 12 yard--from 4.1 to 2.5%.

According to the evaluation of the specialists the total discharge of carbon monoxide in the atmosphere of the city by automobiles of our enterprises has been reduced by more than 20,000 T/year. At the same time the testing and regulation of the power systems and combustion of motors with the help of motor tests have made it possible to save up to 5 million gasoline per year which is a definite contribution to the saving of fuel resources.

It should be noted however that individual enterprises still have not guaranteed the proper tuning of motors for minimum toxicity. For this reason the employees of the State Automobile Inspection sometimes declare as flawed our automobiles returning them to the yard. As indicated at the aforementioned session of the council of directors in the No 2, 10 and 13 taxi yards and the No 2 automobile kombinat there is still insufficient use of diagnostic equipment. The efforts of the named enterprises are directed towards elimination of the deficiencies.

Since recently the No 16 taxi yard has been conducting experimental operation of more than 40 automobiles GAZ-24-07 that operate on liquified gas. In the future it is proposed to increase the scales of experiment. However it should be noted that the work to a great deal is being delayed due to the lack of construction norms and regulations for buildings in which the bottled-gas driven automobiles can be placed. We hope that the experimental operation of the gas automobiles will help reveal and eliminate the still present deficiencies in the design and the execution of the gas apparatus, and improve the stability of the operation of taxis of this model.

The constant attention and practical action of the administration and its enterprises are directed towards the creation of an efficient system for treating the production sewage, reducing the consumption of water from the municipal network, as well as removing discharge of polluted effluence into the reservoirs of the city. I will note that on the whole the automobile industries of the Mosavtolegtrans are the major consumer of water. In 1976 they consumed about 4 million mg/l mainly for washing automobiles.

Previously the taxi yards and automobile kombinats of the administration were equipped with insufficiently complete treatment facilities, and in the discharged waters there remained up to 80 mg/l of suspended particles, and up to 35 mg/l of ether-soluble residue--mineral oils and petroleum products. By striving to work more productively to prevent pollution of the water basin of the city the administration jointly with the Mosvodkanalniiproyekt has created more efficient units of the type "Kristall" of plant design with multiple use of water for production purposes. They were introduced in 1975-1976 in seven automobile plants. In 1977 another five enterprises were equipped with them.

In the vibration filters of the new unit the sewage is freed of suspended particles, and then also petroleum products. The fairly high degree of treatment makes it possible to reuse the water for production purposes. The units "Kristall" have a number of advantages: they are compact, and can occupy a comparatively small area. The joint use with them of devices of the previous type produce good results: the old units produce coarse treatment, while the "Kristally" complete it.

Now in the automobile plants that use the new water treatment devices the intake of water from the municipal network has been reduced by more than 20% which is equivalent to a saving of 220,000-240,000 m^3 of pure water per year. Taking into consideration the positive results of the operation of the new water treatment systems the Mosavtolegtrans envisages maunfacturing, and by the end of the current Five-Year-Plan equipping all of its enterprises with them.

In a parallel manner cooperation is continuing with the Mosvodokanalniiproyekt for development of the active units "Kristall," and studies are being

conducted for dehydration of suspended residue, their extraction from catchment basins, and the destruction by the thermal method of slime wastes. Unfortunately, "Kristally" are as yet manufactured in units, and therefore have a high cost, while the demand for them is very great; for they can be used not only in transportation enterprises. It appears that the time has come to organize serious production of the units "Kristall" at a special-purpose enterprise.

Having related the main directions in the work of our collective for the sanitation of the environment in the city I would like to stress that we also in the future will solve no less complicated tasks to improve the sanitation and hygienic conditions in the capital. Specific plans for this activity are included in the plan for social development of the collective for 1976-1978, whose purpose is the transformation of the taxi yards and automobile kombinats into model enterprises of Moscow.

PHOTO CAPTIONS

1. p 35. One of the new enterprises of the Mosavtolegprans--the No 20 taxi yard.

2. p 36. The diagnostic station equipped with motor tests and hydro analyzers OA-2209, helps to determine the content of harmful substances in the exhausts.

3. p 36. The most modern instruments are used at the automobile plant of the Mosavtolegtrans. In the photo: laser unit to determine camber of wheels in the No 7 taxi yard.

4. p 36. Line TO-2 in the No 11 taxi yard includes checking of motors for toxicity.

5. p 37. Hydro analyzers--instruments to check motors for toxicity--have been introduced in all automobile plants of the Mosavtolegtrans.

6. p 37. The water treatment unit "Kristall" introduced at the No 11 taxi yard.

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SOLID WASTE HANDLING AND PROCESSING

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 5, May 78 pp 15-17

[Article by A. Z. Bagdasaryan, engineer: "Planning and Construction of Enterprises for Disposal of Domestic Wastes"]

[Text] In the published article under discussion different methods are analyzed for disposing of Moscow's domestic garbage. Without claiming absolute correctness the author considers it expedient to construct garbage reprocessing plants instead of incinerators. Taking into consideration the importance of the problem the editors' office turns to the interested organizations and specialists who are working in the field of decontamination of cities to express their opinion, and at the same time continue the conversation on the most rational means of disposing of domestic and industrial waste.

In the program of converting Moscow to a model communist city a considerable place is assigned to providing it with a high sanitation level and environmental protection. The solution of these problems requires the implementation of great technical and organizational measures, among which an important is the timely removal from the territory of houses, and the reliable disposal of domestic garbage.

In recent years in this direction certain work has been done--dumps have been replaced by enterprises for disposing of wastes: a garbage reprocessing plant is operating in Korovina, an incinerator in Beskudnikova, and an incinerator is planned for Biryuleva. In the city new heavy-freight garbage trucks are being used, which produce a great economic effect. In individual micro-regions basically new pneumatic systems are being constructed for the collection and transporting of domestic garbage. However all of this is a beginning to the solution of the problem.

If the first enterprises whose equipment was acquired abroad had to provide the experience of planning construction and operation, as well as become the base of the training of specialists, then the construction of the next plants must solve the problem as a whole. Consequently special attention must be directed to their planning and construction from the viewpoint of the observation of the sanitation and city designing and planning requirements, as well as the economic interests of the national economy.

Currently in Moscow and in cities of the forest and park belt (Odintsovo, Krasnogorsk, Zelenograd, Lyuberptsy, Vidnoye, and others) domestic garbage has accumulated in a quantity roughly of 2.250 million T/ year. Taking into consideration the growth in the population of cities and the increase in the quantity of wastes, as well as the fact that in the future jointly with domestic garbage a part of the industrial will be disposed of, its total quantity subject to disposal in the near future will be 2.800 million T/year. Of this quantity 350,000-400,000 T/year will be incinerated and reprocessed at the extant and projected plants, and for the remaining quantity (2.400-2.450 million T) seven or eight enterprises must be provided for with productivity of 300,000-350,000 T/year each. The total capital investment for these purposes will be approximately 110-120 million R.

In the world practice there are many methods of disposing of domestic wastes: reprocessing into organic fertilizer, combustion (with the use and without the use of the resultant heat); in the United States so-called pyrolysis has become widespread, with two types that fundamentally differ from each other--fast, in which the main product of reprocessing is liquid synthetic fuel, and high-temperature, in the process of which gaseous fuel is manufactured.

In England a completely mechanized unit has been created to divide garbage into fractions that can be used as a secondary raw material. Testing of the unit in the city of Warren-Spring indicated that it can be recommended for extensive application. In the FRG and Switzerland domestic garbage is used to make pressed dividing and fibriform boards which are employed in the construction of multi-story houses. In Italy a completely mechanized plant is operating for the division, preprocessing, and utilization of the components of domestic garbage (food wastes, paper, textiles, metal, plastics).

Each of the listed methods has positive and negative aspects. Therefore the selection of a certain one is an important question since on the one hand domestic garbage is secondary raw material which can be used in the national economy, and on the other hand wastes are a direct danger to the sanitary condition of the city. These factors require that in the selection of a disposal method the peculiarities of each city be taken into consideration separately.

We will examine certain positive and negative aspects of the aforementioned methods as applied to the conditions of Moscow.

Combustion. Positive in it is the fact that disposal of waste occurs at a high sanitation level, and the products of combustion are completely sterile. The section necessary for construction is 3-3.5-fold smaller than the territory of the garbage reprocessing plant of analagous capacity, and the staff of workers is twice as small. Here the service personnel has no contact anywhere with the wastes, and is in a sanitary relationship under favorable conditions. The equipment of the incinerator usually is located in a vertical

plane, therefore the building with insignificant dimensions in layout has a height of 34-40 m. This makes it possible to give it a more expressive architectural form which is an important factor in the arrangement of plants within the city.

At the same time combustion also has deficiencies: they consist of the annual reduction of 1.4-1.5 million T of secondary raw material and valuable organic substances which could have been used in the national economy. As for utilization of heat from the combustion of domestic garbage, then under the conditions of Moscow it is impossible to effectively use it. This fuel is low-calorie (800-1600 kcal/kg) with a large content of moisture (within 35-58%), and with great ash content (25-40%).

In addition the Moscow garbage contains 12-18% fine mineral fractions (sand, glass, and stones) which make combustion difficult and wear out the equipment. And from August through September in the season of vegetable and fruit sales and when defoliation begins the garbage cannot be incinerated without the addition of high-calorie fractions--wood wastes. All of this results in the fact that the heat output is insignificant.

The pattern of operation of incinerators is such that they must operate round the clock and all year. Consequently, it is necessary to consume heat both in the summer, on days off, and during the night. However Moscow does not have such consumers. Consequently the manufactured heat must be either discharged into the atmosphere, or at best transferred into the return line of the Mosenergo heat network if such a line is near the plant. And in both cases the heat will be purposeless.

The manufacture of electricity (in analogy with certain foreign plants) requires installation of high-pressure boilers, steam turbines, organization of return water supply, and construction of cooling towers and complicated power plants which must be served by personnel of high qualification. All of this in significant quantity of resultant electricity results in the fact that its net cost as compared to the electricity manufactured at a standard TETs will be 10-fold higher.

We do not have boiler assemblies for combustion of domestic garbage. For the planning of incinerators they must be manufactured or acquired abroad. The design and manufacture of boiler units is a lengthy process. This will delay the planning of the incinerators for Moscow at least by 6-8 years. The acquisition of boiler units abroad will increase capital investment for construction of 7-8 enterprises by 70-80 million R in currency, and the normal operation of the plants will depend on the supply of imported spare parts.

It should be noted that domestic waste in the near future will contain a considerable percentage of plastics, wastes of synthetic and paint and varnish materials, and new detergents whose combustion will generate new

problems for protecting the equipment from chemical corrosion and the treatment of flue gases from toxic substances before they are discharged into the atmosphere. Moreover slag and mechanical underfired substances will remain in a quantity from 27-30% of the weight of the incinerated garbage. Due to the content of construction and industrial waste the slag is not suitable for use, and it must be dumped. Consequently in the operation of the incinerators the dumps, as well as the transportation expenditures related to this are preserved, though on a smaller scale.

Thus it is impossible to recommend complete combustion of domestic garbage as a method for its disposal. It is inexpedient to spend 15-20 million R on construction of a plant, then spend from 6-8 R of operating expenditures per ton of combustible garbage, and primarily, to destroy valuable secondary raw material.

Pyrolysis. Here in the same way as in combustion, domestic garbage is destroyed. This is the negative aspect of the method. However pyrolysis, as a more progressive variation of combustion has its advantages. Thus both fast and high-temperature processes occur under hermetically sealed conditions, without any harmful discharges into the atmosphere. Here there is maximum utilization of the calorific value of the garbage. It is important that the manufactured liquid and gas fuel can be used directly by means of aggregating the pyrolitic unit with the boiler unit, if there is a consumer of heat that consumes it in the pattern of operation of the unit, and with the absence of a consumer the heat is accumulated and expended as needed.

The unit reprocesses not only domestic garbage, but also industrial wastes, sewage and all those wastes which contain organic substances and have been subject to combustion. If one takes into account that neutralization of industrial waste and sewage is no less a problem than disposal of domestic garbage, then the advantage of the pyrolytic unit compared to combustion is undoubted.

Pyrolytic slag is a completely sterile material. It comprises 3% of the total volume of combustible wastes, and is similar to uniform fine-grain sand of a black color. It is used as a filler in the production of reinforced concrete items, as well as during winter for sprinkling the streets.

An important advantage of the pyrolytic unit is the simplicity and compactness of the design which is a round vertical shaft furnace without a single moving part. For example the high-temperature unit of the firm (Torrek's) of capacity 200 T of garbage per day is 15 m high and 3 m in diameter. This circumstance in turn simplifies the design of the building. The manufactured liquid or gas fuel can be used in standard power engineering devices that consume natural gas or liquid fuel oil without any conversions. Pyrolytic fuel burns completely, and the combustion products do not present any danger for the environment.

If one takes into consideration that abroad pyrolysis is replacing combustion, as well as the fact that different firms have created the corresponding equipment which they have put out on the external market, then the expediency of acquiring pyrolytic units to replace incinerators is evident. Pyrolysis is especially expedient for the elimination of industrial, and hospital wastes, sewage, and so forth. Therefore the creation of a pyrolytic unit in our country is an important question which it is necessary to solve in the shortest time.

Recovery of domestic garbage. According to the data of the Academy of Municipal Services, the domestic garbage of Moscow contains: paper--35.7%, food wastes--33.5%, metal--5.8%, textiles--4%, bones--1.1%, glass--6.5%, leather and rubber--1..%, and plastics--1.3%. This means that in the annual quantity of garbage (2.400 million T) will be: paper--856,800 T, food wastes--800,000 T, metal--115,000 T, textiles--96,200 T, bones--26,500 T, glass--156,200 T, leather and rubber--26,500 T, and plastics--31,500 T. The figures speak for themselves.

Secondary reprocessing of such a quantity of raw material will provide the national economy with a great economic effect. But the value of recovering the components of domestic garbage also lies in the fact that these materials are not simply raw material, but intermediate products whose reprocessing will be 3-4-fold less expensive. It is also important that domestic garbage is a free and increasing source of raw material that is located in direct proximity to the consuming industry.

However the recovery of the components of garbage is possible on the condition that all the processes for the separation and pretreatment of the secondary raw material will be completely mechanized and automated. We still do not have such enterprises. But this method is very promising, therefore even now it is necessary to undertake experimental planning of enterprises and the appropriate equipment with regard for the fact that recovery is becoming widespread abroad.

Reprocessing of garbage into organic fertilizer. First of all, this method of disposal completely meets the requirements of environmental protection, and has received a high evaluation from the workers of the sanitation inspection due to the high level of mechanization of all the processes, and the complete elimination of manual labor. The obtained product, compost, is a valuable organic fertilizer.

The garbage reprocessing plant has its deficiencies. Primarily the land area needed for its construction is 3-3.5-fold greater than for incinerators of the same capacity. In addition a warehouse is necessary whose capacity is designed for a 2-3-month productivity of plant with fairly complicated equipment for mechanization of work related to temporary storage, sorting, and transporting of compost. The compost as a rule contains glass which must be removed before the compost is sent to the consumer. And the removal of glass is related to additional outlays.

But composting also has advantages. The garbage reprocessing plant does not release substances and particles that contaminate the atmosphere. Suburban agriculture is supplied with a valuable organic fertilizer. And the use of the compost in the sovkhozes of the Leningradskaya and Moskovskaya oblasts have indicated its high effectiveness as a biological fuel for enclosed soils. The yield of early vegetables is accelerated by 1-1.5 months, and the harvest is increased 1.5-2-fold. According to the data of the production association of the sovkhozes of the Moskovskaya oblasts the need for compost only in the farms located at a distance up to 70 km from the capital is 1-1.2 million T/year. Compost can also be used to prepare the plant soil in which there is an acute need for greens.

According to the experience of foreign countries from compost dividing and fibriform pressed boards can be manufactured according to the method of the form "Yettser" which are used in the construction of multi-story residential and administrative buildings. From compost one can also make foundry sand for casting.

Thus the most expedient method for disposing of Moscow's domestic garbage is currently its rapid reprocessing into compost, and combustion only of the unusable fuel portions with the use of heat for in-house needs. The garbage reprocessing plants are a completely profitable operation. And if one takes into consideration the profit from the realization of the increase in agricultural products as a result of the use of compost, then the capital investitures are compensated for in a very short time. The more sosince the main equipment of the plants will consist of biological drums which are produced by the plant "Volgatsemmash." Boiler units for the combustion of the non-usable particles of garbage can be supplied by the Czechoslovakian firm "ChDK--Dukla."

By having four boiler units one can group them with the biological drums and plan two complex plants with total productivity 750,000-800,000 T/year. It is expedient to construct one of them in Odintsova, and the second in Lyubertsy since this has also been provided for by the general scheme for sanitation treatment of the city developed by the NII i PI [Scientific Research Institute and Planning Institute] of the general plan. The land sections have been set aside for these plants.

The planning of the plants can be started quickly since the initial data are available. Here the preparation of technical documents can be finished before the end of 1979, and the construction--in 1980-1981. Then starting with 1982 all the plants (with regard for Korovinskiy, Beskudnikovskiy, and Biryulevskiy) will process and burn 1.1-1.2 million T/year, which will be 60-65% of the annual amount of garbage currently accumulated in Moscow. And this would remove the acuteness of the problem in the immediate years.

PHOTO CAPTIONS

1. p 15. Warehouse of finished products (in the picture to the left) and biological chambers of the Moscow garbage reprocessing plant in Korovina.

2. p 16. Building of the pyrolytic plant in Buffalo (United States).

3. p 17. Gas generator operating on wastes of the Swedish firm Mutala in the process of assembly.

9035
CSO: 5000

SULPHURIC ACID FROM DYNAMITE FACTORY POLLUTES BALTIC

Helsinki UUSI SUOMI in Finnish 20 Jul 78 p 2

[Article: "A Ton of Sulphuric Acid Per Hour Into the Sea at Hango"]

[Text] Nearly 1,000 kilos of sulphuric acid per hour flows into the sea at Hango from the Forsiitti-Dynamiitti Corporation's plant, state Ulf Lindstrom, chairman of the inspection section of the Hango Board of Health, and health inspector Birger Lindberg.

Ove Moliis-Mellberg, general manager of the plant, denies the allegations and accuses the inspectors of illegal entry into the area of the plant.

Lindstrom and Lindberg took water samples from the area of the plant on 17 June.

It was a question of a normal study of the city's waste water system. It deviated from the normal only in that an advanced announcement of the inspection was not given to the plant. Hango City Secretary Patrick Zilliacus does not want to make a statement on why no advance notice was given.

The waste water samples were sent to the State Technical Research Institute in Helsinki. According to the results sent back one of the samples contained 63 percent sulphuric acid and the other solution 6 percent.

We could have immediately stated that the sample was 63 percent since it was taken from inside the plant. The solution is not permitted to flow into the sea but it is retreated in the plant. There is, however, a slight possibility that it could reach the sea, admits Moliis-Mellberg.

The general manager does not consider it a tenable argument that at the mouth of the plant's discharge pipe the amount of sulphuric acid is 6 percent.

Twice a year the Vesi-Hydro Corporation conducts an exceptionally strict study on the waste waters from the plant and not once has there been observed a dangerous level of sulphuric acid.

According to information given to HUFVUDSTADSBLADET Lindstrom states that the 63-percent solution was taken from an area which has a direct connection with the discharge pipe. The 6-percent solution was taken from outside of the plant at the mouth of the discharge pipe.

Estimate Based on Incorrect Information

Moliis-Mellberg considers the allegation that 1,000 kilos of sulphuric acid per hour enters the sea to be a falsehood.

The estimate is based on incorrect readings given by a worker.

This is a storm in a water glass since few plants exercise such strict supervision over their waste water. The plant has been in operation here for 30 years and it has never caused any harm to the environment. I will not say that the plant has never discharged sulphuric acid into the sea, but never to a detrimental degree even though 20 years ago 10 times as much poison was allowed into the sea than currently.

A solution with a slight sulphuric acid content is not very harmful to the fauna and flora, but in an undiluted form it is destructive. If the dynamite plant has discharged sulphuric acid into the sea, it is very difficult to estimate how long this has been going on, since the area of the plant is closed off and no one can enter without advance notice.

Officials Forced Themselves In

The officials who conducted the study forced themselves into the area where entry was prohibited, states Moliis-Mellberg.

For this reason Forsiitti-Dynamitti Corporation has sent a letter concerning this entry to the Hango City Council. The city council tabled the matter at its meeting on Monday since it decided to request a written report concerning the matter from Lindberg.

The chief product of the Forsiitti-Dynamitti Corporation has been dynamite since it began operations. A new product, a plastics disperser, or a binding agent for glues and paint makes up 30 percent of the production. It was begun in the beginning of the 1970's. Other products are TNT and fuses. The government owns one-tenth of the corporation, the remainder is distributed among approximately 100 individual stockholders. The company's turnover is a little less than 40 million markkas. The factory is situated in the middle of a 400-hectare area 8 kilometers north of Hango along the seashore.

10576
CSO: 5000

WATER PURIFICATION TO BE MORE DEPENDENT ON OZONE, LESS ON CHLORINE

Helsinki HELSINGIN SANOMAT in Finnish 29 Jul 78 p 3

[Article: "Ozone to Improve Helsinki's Drinking Water"]

[Text] Next year an ozone plant will be built next to the Pitkakoski Water Plant, after which ozone will be used for disinfecting city water in Helsinki instead of using chlorine.

The primary reason for transferring to ozone is to improve the taste and smell of the water.

Presently in Helsinki chlorine is used for disinfecting raw water since the water basin of the Vantaa River contains much ammonia, for example. An unpleasant taste and smell are generated in connection with the use of chlorine and in addition to this there are poisonous compounds which are not generated with the use of ozone. On the other hand, ozone is an effective oxidizing agent which splits up organic compounds that worsen the quality of the water.

Ozone is primarily used in the water plants of Central Europe. Among East European countries the Soviet Union and Poland have begun to use ozone. And interest is also being expressed in it in the United States.

Next year Helsinki will also be receiving some water from Paijantee. It will take until 1982 to finish the tunnel, at which time it will be possible to abandon the use of water from the Vantaa River with all its vegetation.

The water plant tests the quality of Helsinki drinking water daily. Samples are collected from approximately 40 points from different parts of the city. In the suburbs the samples are collected less often than they are in the center city. At the laboratory the turbidity, color, and chlorine content, among other things, are tested.

10576
CSO: 5000

CHEMICALS USED IN FORESTRY CAUSE CONCERN

Helsinki HUFVUDSTADSBLADET in Swedish 16 Jul 78 pp 1,8

[Text] How should the noxious brush in forests and along the roads be controlled? The question arose this year when the National Road Board stepped up its so-called chemical sprout control along the roads and a number of communes rose up to resist that decision by the higher authorities.

In chemical sprout control, poisons diluted with water are sprayed over forests from airplanes or along the roads by manual or mechanical means. Opinions differ as to how harmful those poisons should be considered to be. Conservationists claim that chemical interference in nature always carries a price that must be paid in the long run.

The National Road Board controls the growth of sprouts along our roads primarily as a matter of traffic safety. Better visibility along the roads reduces the risk of collision with a moose. The stands of sprouts also choke the ditches along the shoulders of roads, and in winter they make it easy for the snow to pile up on the roadway.

Sprout control is carried on both mechanically and chemically. Leaf scythes, saws, and specially designed machines are used for mechanical control. For chemical control, the various road districts use a poison known as MPCA, which is diluted with water and then sprayed on leaves and stems at the roadside within a radius of from 5 to 10 meters.

The National Road Board's object is to control the growth of sprouts along some 15,000 kilometers of road throughout the country. Most of it is done mechanically, but effectiveness and economic reasons have led to an increase in spraying with MPCA. Last year the Hyvinge Road District was the only one where chemical sprays were used, but this year MPCA is being used everywhere except in the Kymmene and Abo road districts.

The National Road Board points out in a circular that mechanical control alone is not an effective way to keep the road shoulders free of sprouts, since every sprout that is cut down multiplies sixfold, and the cutting has

to be done all over again the following year. The MPCA solution, on the other hand, eradicates the shoots as well.

There is also an economic side to the question: spraying requires less manpower and has a long-lasting effect.

Dangers

The important question, naturally, is this: how harmful is the MPCA solution to human beings and to the plant and animal life that is not to be controlled?

The National Road Board emphasizes that chemical sprout control is carried out with poisons that are as safe as possible and that have been approved by the health authorities. It also points out that the spraying is done in compliance with the instructions issued by the Ministry of Agriculture and Forestry.

MPCA is also the poison most frequently used in aerial spraying. It is classified as a Class 2 poison and is used extensively in agriculture to control weeds. MPCA has almost completely replaced an earlier poison that contained the dangerous impurity known as TCDD.

A couple of years ago the Institute for Industrial Hygiene made a study of people who had taken part in the spraying of sprouts. It emerged from the study that among the harmful effects of the spraying were fatigue, nausea, and dizziness. When absorbed in large amounts, MPCA causes stomach pains and liver damage. But it should be noted that a 2-percent solution is used for spraying, and that cannot even be regarded as poisonous.

Research Should Continue

Commenting on the very recent incident in which two children were thought to have contracted eczema by eating sprayed berries they had picked along the roadside, Prof Pekka Nuorteva of Helsinki University says:

"No studies have indicated that the MPCA poison would have any effect on the skin. In the case of the children, it appears to have been a coincidence. But new studies on the effect of the products used in sprout control ought to be undertaken without delay to insure that the earlier results can be considered completely reliable."

A new product for sprout control has been approved by the Plant Protection Institute and has begun to be used to a limited extent. This new product--glysophate--is considered to be the safest so far. Berries and mushrooms sprayed with glysophate can be picked as early as 1 week after spraying.

It has been learned, however, that the research on the substance glysophate, which was carried out by the International Bio-Test Laboratory in the United States, was dictated by the poison-manufacturing interests and is therefore

not to be considered reliable. Our own research has been based partly on those earlier findings.

Professor Nuorteva says, "Until we know more about glysophate, its use should not be permitted."

According to a forecast by the Forest Information Center, about 10 percent of all aerial spraying will be done with glysophate.

Balance Upset

Professor Nuorteva maintains that chemical sprout control harms nature in the long run and that the damage it does cannot be justified on the grounds of either effectiveness or crass economic calculations.

"The ecosystem--the natural balance in nature--is upset not only by aerial spraying over large areas but also when roadsides are sprayed. The osier is the bush that blooms earliest in the spring, and it is necessary to bees, among other things. The osier thrives especially along the roads."

As another example, Professor Nuorteva mentioned the partridge, which depends on the buds found along the roadside to build up an adequate layer of fat for seeing it through the winter.

Pertti Seiskari, head of the Nature Conservation Office in the Ministry of Agriculture and Forestry, says, "It is true that we should be able to show more restraint in spraying fields and land. Other forms of sprout control should be tried instead. Why not hire more people for mechanical clearing?"

Pertti Seiskari says, "Aerial spraying in particular is very disturbing, because clouds of herbicide settle indiscriminately all over the forests.

"Spraying roadsides causes other problems, since in that case we are often operating very close to human settlements. Berries along the roadside should be avoided anyway, of course, because of their lead content, but it is even worse to eat sprayed berries from the roadside."

Directives for Spraying

The National Road Board bases its stand on the 1976 ruling by the Ministry of Agriculture and Forestry concerning the spraying of chemicals for sprout control along roads, railroad embankments, and electric power lines.

That ruling provides that the National Road Board must notify a commune's health and water board 2 weeks before spraying begins in that commune's territory, and it must also notify the police 1 week before. The Plant Protection Institute and the water districts are to be given more detailed information concerning the spraying if they request it.

The ruling also says that if possible, the spraying should be done after the dandelions bloom but before the raspberries bloom. Also, spraying must not be done within 50 meters of settled areas, and clearly visible signs must be placed along the road prohibiting the picking of berries and mushrooms.

The ministry's ruling says nothing about the right of communes to ban chemical sprout control along their roads.

According to a law that went into effect this year, a commune can apply to the Ministry of Agriculture and Forestry for a ban on aerial spraying in its territory. About 30 communes have done so. Multia, Vaala, and Suomussalmi have already been granted such a ban. The Ministry of Agriculture and Forestry says that all the applications will probably be approved. Minister Johannes Virolainen said in a recent speech that for employment and other reasons, chemical sprout control should be cut back in favor of mechanical control.

This year's plans called for the aerial spraying of about 24,000 hectares during the month of August, chiefly in the northern parts of the country.

Concern in the Communes

The use of poison to control sprouts along the roads has caused concern in many quarters. Earlier this year, the health boards in Oravais, Vora, Maxmo, and Korsholm decided that there would be no chemical sprout control in their territories. There were spontaneous campaigns among the local residents.

And now the local federations for health work in Karis, Pojo, and Inga as well as the Ekenas area federation have reached a similar decision.

Health inspector Torvald Tornroos of Ekenas says, "We are going to stick to our demand. We will try to get the police to stop the spraying if it starts."

Those local decisions are based on section 82 of the Public Health Act, which states that local health boards have the right to "issue the instructions necessary in order to avert dangers to health or to remedy sanitary conditions that are a nuisance to the neighborhood." In other words, they are claiming that the MPCA poison is also injurious to health when found in diluted form along the roads.

The National Road Board has appealed those decisions by the communes on the grounds that only the Ministry of Agriculture and Forestry has the right to ban the use of poisons against sprouts. The case will come before the local administrative court of appeal in August. After that, it may be taken to the Supreme Administrative Court for a final ruling.

Tempest in a Teapot?

Researchers and officials seem a trifle bewildered by the current interest in sprout control.

Hasse Blomqvist, department head at the Plant Protection Institute, says, "Vastly greater amounts of the same poison are used in agriculture. Aerial spraying is carried out over just a fraction of the total forest area. The poisons have been in use for about 20 years, and when used correctly, they have not been shown to be harmful."

The Ministry of Social Affairs and Health stated last fall, in response to a question from Parliament, that current legislation includes adequate provision for banning or limiting the use of herbicides against sprouts whenever necessary.

The Ministry of Agriculture and Forestry has announced that there are no plans to place a total ban on chemical means of sprout control.

11798
CSO: 5000

LEAD CONTENT OF GASOLINE IS AMONG HIGHEST IN EUROPE

Helsinki HUFVUDSTADSBLADET in Swedish 15 Jul 78 pp 1,4

[Text] At present there is no legislation to permit the regulation of lead content in gasoline, but new rules are being worked out. For several years the FRG has had a legal maximum limit of 0.15 grams of lead per liter. In Finland, the Neste Company has settled on the limit of 0.708 grams per liter. On the average, Neste's gasoline has a lead content of 0.45 grams per liter, or three times as much as German gasoline.

Lead is a poisonous metal. According to WHO, a full-grown human being can tolerate only three one-thousandths of a gram of lead per week.

A 1977 study in Stockholm showed that children in Sweden run the risk of nerve damage due to the large amount of lead discharged into the air.

According to that study, the most exposed are those living near metal industries and superhighways and those living in large cities. Children constitute a very special class of risk, for one thing because they breathe at the same level where automobile exhaust is found.

The study showed that a level of 40 micrograms of lead per 100 milliliters of blood causes difficulty in concentration. According to the report, it was found that in children in large cities, the level of lead amounted to 35 micrograms per 100 milliliters of blood.

In Finland it is recommended that the heavy-metal content in agricultural products not exceed 3 milligrams per kilogram. In the summer of 1977 the Public Health Board ordered a study which showed that the average level of heavy metals in vegetables in farming areas exposed to traffic in Helsinki was 0.5 mg per kilogram. The study also showed that in some places that level rose to 3 mg, the recommended upper limit.

Lead Increases Octane Rating

The addition of lead increases gasoline's octane rating. If lead is left out, the octane rating must be increased in some other way. And that costs

money. A study made in Central Europe shows that it costs from 3 to 5 pennia more per liter to produce gasoline with a lead content of 0.15 grams per liter.

Low-lead gasoline is produced at the Neste refinery in Skoldvik. The older refinery in Nadendal, on the other hand, is not able to produce high-octane gasoline with a low lead content. Engineer Markku Laurila, who works for Neste in Borga, said that on the average, there is no difference between 92-octane and 100-octane gasoline as far as the amount of lead is concerned. The difference depends on which refinery produced the product.

In most European countries the lead content is set at 0.4 grams per liter. In Sweden, where the number of cars, the climate, and road conditions are about the same as in Finland, the possibility of further reducing the limit to 0.15 grams--that is, to the same level as in the FRG--is being considered.

Automobile Industry Also Affected

In the production of high-octane gasoline with a low lead content, the lead is replaced by other high-octane components. These do not have to be additives. It is entirely possible to produce unleaded high-octane gasoline directly from crude oil. But it is expensive.

Not only is it expensive, but unleaded gasoline also places new demands on the car manufacturers. If the lead content is reduced with no other steps being taken, the octane rating drops. If it is to operate on low-octane gasoline, the engine's compression must be lowered. That, in turn, affects engine speed and temperature. And engine power usually drops as well.

In an effort to remedy that situation while at the same time complying with emission control standards, auto manufacturers are working constantly to develop new engine designs. Electronic fuel injection and turbines are just two examples of designs being worked on in an effort to achieve cleaner exhaust while maintaining engine power.

Lead Will not Disappear

Engineer Laurila says, "The higher price of crude oil and declining petroleum reserves indicate that lead will continue to be used in gasoline." But he is totally convinced that the amount of lead in gasoline will be regulated.

And in Finland, regulation is in the offing. The lead content of gasoline is going to be regulated in connection with the air pollution law, which is now getting its finishing touches at the Ministry of Interior. That law includes a section allowing authorities to regulate the presence of secondary substances in finished products. Lead in gasoline is a good example.

11798
CSO: 5000

FISH FROM FJORD HAVE POISON IN LIVER

Oslo AFTENPOSTEN in Norwegian 19 Jul 78 (Evening Ed) pp 1, 12

[Text] We must warn against eating liver from all types of fish caught in the Grenland fjords because the fish have a high content of chlorinated compounds. This is the conclusion in a new report from the Fisheries Directorate. It is based on 3 researchers' investigations of 207 individual samples of fish and 27 samples of brisling and small herring in the Grenland Fjord in 1977. The report supports the assumptions and investigations previously discussed in the press.

Filets from fish caught in the Frier Fjord can be eaten two to three times weekly, according to the report, while filets from fish caught in the Eidanger or the Orme Fjord can be eaten without restrictions. With regard to herring caught in the Frier Fjord, one can consume a weekly quantity corresponding to two boaxes of brisling/sardines. According to the conclusion, no foreign smell or taste could be detected in the brisling or the small herring caught in 1977. One has thus not been able to find any new examples of the malodorous brisling which was caught in 1972 and which led to the ban on catching brisling in the Grenland fjords.

It was specifically brisling which was to be analyzed in the investigation, but other fish caught in the trawl net have also been investigated. According to the result of the tests, the mercury content in the analysis does not lead to any stronger restrictions than those which are due to the chlorinated compounds.

The report also says: 23 cod were analyzed; approximately one-third of these, mostly the larger fish, were different from normal cod. Swollen gill lids and red accumulations of liquid just below the skin made the fish not very tempting as food. Several of these fish had livers which had shriveled up. An 85-cm fish had a liver as big as a matchbox. There did not seem to be any connection between deformities and the polluting components which were analyzed here. A 5-year-old cod had a content of chlorinated hydrocarbons of 320 mg per kg.

Approximately one-fifth of the coalfish caught in the Frier Fjord was afflicted with vibriosis. The fish had red spots, often in the tail region, but also spread more over the body. However, the liver appeared normal in most cases.

The stationary brisling caught in the Frier Fjord seems to accumulate the chlorinated compounds, since the content increased with age. Samples have been taken from various places in the Frier Fjord and distributed over the entire year.

In a note the three researchers behind the report maintain that the river Fjord is a heavily polluted fjord with a poor fauna. For one thing, according to an NIVA [Norwegian Institute for Water Research] report, no mussels have been found in the upper part of the fjord in recent years.

8958
CSO: 5000

BRIEFS

WHALING ACTIVITY CEASES--Whaling activity has stopped completely, and it is clear that no more small whales will be caught this year. This is a fact although the summer season for whaling was supposed to start today. The reason for the halt in the whaling activity is primarily the poor marketing possibilities for whale meat. The whaling season this spring also had to be terminated 2 weeks before the established time for the same reason. Of the maximum quota of 1,790 whales, only 1,290 whales have been caught with a total weight of 1,700 tons. The remaining quota of 500 animals will not be caught. The raw value of the whales caught has reached approximately 19 million kroner. [Text] [Oslo AFTENPOSTEN in Norwegian 21 Jul 78 pp 1, 10 (Evening Ed)] 8958

CSO: 5000

AGRICULTURE MINISTER DENIES FORESTERS' REQUEST TO LIFT DDT BAN

Stockholm DAGENS NYHETER in Swedish 12 Jul 78 p 30

[Interview with Anders Dahlgren by Dick Ljungberg]

[Text] There are no grounds for allowing the use of DDT in the forests again now that it has once been banned. So Minister of Agriculture Anders Dahlgren (Center Party) said in a DAGENS NYHETER interview. He does not believe that timber production can increase as much as the forestry report claims. The forestry report is supported by the big timber companies, the timber industry, and the Lumbermen's Union.

"I think it is a good guess that in the future we shall not get much beyond the production level that we have today," says Anders Dahlgren. "But that is also based on what the Ministry of Industry has come up with."

At the same time that Dahlgren presents his big proposition about the future organization of the forest industry in March 1979, it is expected that the minister of industry, Nils G. Åsling, will also come out with proposals concerning the future of the forest industry.

"If there is to be an ambitious program for the forest industry, it may require taking measures in the forest that we may perhaps be skeptical about otherwise," says Dahlgren.

Measures that are proposed in the forestry report - under the Alternative 2 advocated in the report - are draining large areas of swamps and marshes, planting the fast-growing North American pine *Pinus contorta*, increased use of manure in the forest, increased spraying, and perhaps also the use of DDT.

According to the report, the program would bring about an increase in production from 75 million cubic meters of timber a year to 89 million in 100 years' time. During the 1980's the forest industry would be able to utilize 90 percent of its capacity, as against 85 percent at present.

The environmentalists protest against that alternative, as do the small forest owners, while the big forest owners, the forest industry, and the Lumbermen's Union favor it.

No DDT

But Anders Dahlgren is sceptical about the alternative, although he has not yet read all of the responses to it.

"It would involve large-scale use of phenoxy acids (against herbaceous weeds) in the forest and presumably also the use of DDT for regrowth. It is hardly likely that we will accept that alternative."

Among others, the Crown Lands Board wants to allow the use of DDT - completely banned since 1975 - primarily to deal with the snout beetle's ravages in new plantings.

"DDT has been banned and there is no reason to release it again," says Anders Dahlgren. "From the point of view of industrial safety I do not think DDT is so dangerous, but it stays in the ground and gradually leaches out and gets into the water.

"Other methods of combatting harmful insects will have to be tried. No cutting for three years after clearing and proper preparation of the ground have proved to give better results. Moreover, I believe the plant care has been poor."

In this the minister of agriculture is taking about the same line as the Lumbermen's Union with regard to DDT.

But what about phenoxy acids? In 1977 the use of hormone sprays containing trichlorophenoxyacetic acid (2,4,5-T) was prohibited after alarm signals from Värmland and other places. But other phenoxy acids can be used against weeds. Even from the air with special permission.

"That is the same thing in principle that is done in agriculture, and it cannot be logically prohibited in sylviculture," says Dahlgren.

In Finland there is discussion of prohibiting phenoxy acids, but from the employment standpoint; i.e., they would switch to clearing by hand. But that is an economic question. Clearing by hand would have to be repeated at regular intervals, while once is enough with phenoxy acids.

Phenoxy Acids Remain

Spraying with phenoxy acids is done mainly in Norrland, and Anders Dahlgren thinks that the protests against the spraying are excessive. The areas involved are small.

"If you put all the forests in Sweden together and started at the southern tip of the country, they would reach to a line from Östersund to Sollefteå.

[This is considerably more than half of the country.] But the forest area that is being sprayed corresponds to only one fifth of the area of the commune of Norrtälje. That is a fact and it should be borne in mind when the opponents sometimes try to give the impression that the whole of Sweden is being sprayed."

Dahlgren does not want to take a position today, however, on whether more phenoxy acids should be used in the forest.

Use of manure in the forests is another thing that many protest against, but Anders Dahlgren will not agree that poison is involved.

"That is only a natural mixture of minerals and air (nitrogen) that is being supplied to the forest. In general it is only the big forest companies, including the state concerns, that make use of manure. For many smaller forest owners it is unrealistic to manure for results that may show up in 40 to 60 years. But in many areas production could certainly be increased by manuring."

Draining

The draining of large areas of swamp and marshes has also evoked protests, partly on account of the animal life.

"We know too little about that so far," says Anders Dahlgren. "The environmental agency and the län governments have undertaken to inventory the swamps, wetlands, and marshes. First of all we should have to be able to define what we mean by those terms."

The small forest owners are considerably more skeptical toward the proposals in the forestry report than the big ones. That is evident from the responses of the Lantbrukarnas riksförbund [National Farmers' Association] and Sveriges skogsägares riksförbund [National Forest Owners' Association of Sweden].

"I believe the smaller forest owners are more sensitive to environmental values," says Anders Dahlgren. "They do not have the same big business point of view as the big forest companies, but a more ecological view. They are afraid of poisons, for example."

Dahlgren has a dilemma there, for he likes to talk about strengthening the family farm - and protecting the environment - while the forestry experts, for example, want large-scale exploitation in order to protect their jobs.

The preparations for the big forest proposition have hardly begun yet. But one thing is certain. There will be no obligatory forestry contributions to finance replanting and clearing, as recommended in the forestry report. The June meeting of the Center Party said no to that, with the hearty concurrence of Anders Dahlgren.

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LAWS ON ROAD TRANSPORT OF CHEMICALS CONFUSING

Stockholm DAGENS NYHETER in Swedish 14 Jul 78 p 14

[Article by Cecilia Steen-Johnsson]

[Text] Every seventh truck on Swedish roads carries dangerous materials. The regulations that apply to these shipments are a confusing system of different laws and decrees. Many different authorities are involved.

"All regulations that concern transportation of dangerous materials should be coordinated and the responsibility placed on a single authority. As it is now, there is great confusion among those who transport dangerous materials. The degree of toxicity is appraised differently by different authorities, and the labeling is not the same, either."

That is the statement of Fredrik Björkman, a division director in the Ministry of Industry, who has been concerned with the question in various investigations since 1964.

Many Authorities

"Vinyl chloride is a good example," says Fredrik Björkman. "It is both toxic and inflammable, and comes under both the law on materials that are dangerous to health and the environment and the law on inflammable materials. Both the environmental agency and the explosives inspection are involved."

Rail, sea, and air transport have their own international systems and markings of dangerous goods, and so does highway transport.

"Confusion arises in changing from one mode of transportation to another," says Fredrik Björkman. "One authority's responsibility for control ends and another's begins. We must clear away this tangle of different regulations and bring everything under one agency if we are to achieve safety."

Joint Rules

The Social Democrats took up this question among others in a motion in January 1977. They called for a single system of rules and a central agency, a transport safety agency, to bring all shipments of dangerous materials under a single authority.

The question was dealt with by the ministries of industry and communications jointly. In the fall work is to begin on the directive for an agency. The long awaited coordination of all transportation of dangerous materials will finally get under way. Every seventh truck on the Swedish roads has a dangerous load.

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WORK CONTINUES ON VARIOUS ISTANBUL WATER PROJECTS

Istanbul MILLIYET in Turkish 5 Jul 78 p 11

/Text/ In order to create a dam reservoir to meet the drinking water needs of a aection of Istanbul, work has begun by the Fourteenth Regional Direct Directorate of the State Hydraulic Affairs Directorate General (SHA) to sever Buyukcekmece Lake's outlet to the sea.

According to an announcement by SHA Fourteenth Regional Director Talha Ermis, the Buyukcekmece Dam, whose construction was begun in order to provide water to sections of Istanbul's European districts excluded from the Major Istanbul Drinking Water Project, is expected to be completed in 4 years.

Moreover, work is cintinuing to complete the Major Istanbul Drinking Water Project which is being built jointly by the SHA and the Istanbul Water Works Administration through the benefit of 37 million dollars in credit provided by the World Bank.

Following the completion of the Bosphorus Underwater Pipeline between Salacak and Sarayburnu by a Japanese firm sometime ago, construction was begun on the Camlica-Salacak line. It was reported that on this line the work of laying the steel, which is 1.80 meters in diameter per section, and the initial tension reinforced concrete, which is 1.85 meters in diameter per section, should be completed within a year.

After the completion of the Camlica-Salacak pipeline Omerli dam reservoir water can be provided to a section of Istanbul's Anatolian shore. When the Camlica-Pendik-Kartal-Cevizli pipeline, to be built later, is completed, the entire Anatolian shore will have benefited from this water.

After the completion within 3 years of the Sharayburnu-Yenikapi-Silivrikapi-Cirpici-Bakirkoy-Bahcelievler pipeline, which is expected to be begun a year from now, Omerli dam water can be provided to a large section of European Istanbul.

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The steel pipes used on the line are to be manufactured in a privately-owned Turkish factory while the reinforced concrete pipes are to be made in a SHA reinforced concrete factory in Tuzla. The valves, water dampers, measuring instruments, and related equipment required for the water network will be provided by various foreign companies.

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